



Drug-related Deaths as reported by Coroners in England & Wales

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Annual Review 1999 And np-SAD Surveillance Report No. 5

**National Programme on Substance Abuse
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PREFACE

This is the fifth report published by the National Programme on Substance Abuse Deaths (np-SAD). This report takes the form of an annual review for 1999 and also contains the surveillance report for the period July to December 1999, which has not previously been published.

This report demonstrates a further increase in the number of participating coroners. We have also observed an increase in the number of enquiries from Drug Action Teams across the UK.

Surveillance data provided in these reports continue to highlight the need for greater vigilance in preventing the harm associated with psychoactive substances, both licit and illicit. It is hoped that the information provided in these reports will alert those with responsibility for health and social care to the extent of the problem and that it will guide future prevention initiatives.

Earlier reports have provided evidence considered by the Prevention Working Group (PWG) of the Advisory Council on Misuse of Drugs (ACMD) and members of the programme were this year asked to give evidence in person to inform future strategy and policy for preventing drug-related deaths nationally. The group's report 'Reducing drug related deaths'¹ was published in June 2000. It makes a number of recommendations concerning the way in which data on such deaths is collected and disseminated. A working group chaired by the Department of Health has started examining relevant issues in this area and members of the np-SAD team are actively involved in the exercise.

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L S Addicott, Cardiff & the Vale of Glamorgan
 W J Armstrong, Norwich
 J S Atkinson, North Lincs & Grimsby
 R D Atkinson, Lincoln
 A H Baker, Diss
 P Bedford, East Berkshire
 J D Bruce, East Cornwall
 P L Brunton, Ceredigion
 M J C Burgess, Surrey
 J D K Brunton, CBE, The Queen's Household
 E T Carlyon, West Cornwall
 D R Chambers, City of London
 S M T Chan, Inner North London
 N D Chapman, Nottinghamshire
 M F Coker, Warwickshire
 M J Coppel, West Manchester
 R H G Corner, Milton Keynes
 W D F Coverdale, York
 R D Crawford-Clarke MBE, Mid & N Shrops
 A R Craze, East Sussex
 W F G Dolman, Northern London
 M Donnelly, Hartlepool
 C P Dorries, South Yorkshire (West)
 W Duffy, Gateshead & South Tyneside
 P E A Forrest, Avon
 C B Gallon, North Tyneside and South
 Northumberland
 L N Gorodkin, Manchester Central
 M T Gwynne, Telford & Wrekin
 D M Halpern, Herefordshire
 V Hamilton-Deeley, Brighton and Hove
 R L Hatch, North West Kent
 D Hinchliff, West Yorkshire (Eastern)
 C Hoile, West Berkshire
 J Hollis, Powys
 E S Hooper South Yorkshire (East)
 M S Howells, Pembrokeshire
 G C Howson, North Lancashire
 R A Hulett, Buckinghamshire
 C W Johnson, Wirral
 M C Johnston, West Dorset
 T Kelly, The Hundred of Scarsdale
 J R Kenroy, Portsmouth & S E Hants
 S King, Wolverhampton
 P A Knapman, Inner West London
 W R Knowles, Kings Lynn
 A Lawson, Hertford
 S G Lee, Blackpool and the Fylde
 A G Leguen de Lacroix, Lowestoft
 S Lynch, Inner South London

A L Maddrell, Cheltenham
 D C Masters, Wiltshire & Swindon
 J A Matthews, Isle of Wight
 M H McCann, Preston & South West Lancs
 I G McCreath, MBE, North Northumberland
 N S Meadows, Plymouth & S W Devon
 D Mitford, Newcastle-upon-Tyne
 J R Morgan, Swansea & Gower
 D S Morris, Beds & Luton and S & W Cambs
 W R Morris, North & East Cambridgeshire
 I H Morton, North East Cumbria
 N E N Neville-Jones, Bournemouth, Poole & East
 Dorset
 M D Oakley, North Yorkshire (East)
 D J Osborne, Neath & Port Talbot
 W J Owen, Carmarthenshire
 A Pember, Northamptonshire
 D W Pepperell, Isles of Scilly
 T J Pert, Grantham
 A J Pim, Reading
 J S Pollard, South Manchester
 D L Prichard, Sandwell
 T C Prickett, South Cumbria
 A J A Rebello, Blackburn, Hyndburn & Ribble
 Valley and Liverpool
 R Redman, Ashford & Shepway
 N L Rheinberg, East Somerset and Cheshire
 M R Rose, West Somerset
 P B Rose, Southern London
 V F Round, Dudley and Worcestershire
 C G Rushton, High Peak of Derbyshire
 G S Ryall, Peterborough and Stamford
 G M Saul, East Riding & Hull
 N A N Sharpley, Louth
 M C Shaw, Sunderland
 M J F Sheffield, Teesside
 G A Short, Hampshire Central
 A F T Sibcy, South Shropshire
 J M Smith, Cambridge City & Southern Cambs
 I Smith, Furness, Cumbria
 J C M Starling, Dereham, Norfolk
 E Stearns, Eastern London
 R J Stone, West Sussex
 R H B Sturt, East Kent
 C K Sumner, Knowsley, St Helens & Sefton
 R J Sykes, Mid Kent & Medway
 J M Symington, Leicester City and S. Leicester
 J C Taylor, Western Cumbria
 M Taylor, Boston & Spalding
 E G Thomas, West Hertfordshire

H M Turner, Torbay & South Devon
R J Van Oppen, Exeter & Greater Devon
J A S Vick, Hitchin
E J Wain, Stoke-on-Trent & North Staffs
H B Walrond, West Suffolk
R S R Warnes, Sleaford
W M Weir, Essex & Thurrock
R L Whittaker, West Yorkshire (Western)
R M Whittington, Birmingham & Solihull
B Williams, North Manchester
K St J Wiseman, Southampton & the New Forest

Note: We apologise for having omitted from the 4th np-SAD report on drug-related deaths:
Mr B. Williams, H M Coroner for North Manchester

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Key Points

Annual Review

- ◆ Notifications of 1413 drug-related deaths occurring in 1999 were received from a total of 97 coroners in England and Wales.
- ◆ The majority of cases died from accidental poisoning (76%). Males were more likely than females to die of accidental poisoning. Conversely, females were more likely than males to die of intentional self-poisoning. Eighty-three percent of cases under the age of 45 years died of accidental poisoning.
- ◆ Approximately 62% of cases had a history of drug abuse/dependence (see section II What is a case? Who is a drug abuser/dependent?) and on average the age at death was 16 years younger than those without such a history
- ◆ Brighton & Hove recorded the highest annual drug-related death rate (24.1/100,000 population), followed by Blackpool & Fylde (18.7/100,000), Norwich (16.6/100,000), Furness (14.1/100,000) and Inner North London (10.6/100,000).
- ◆ For cases in which a specific drug was implicated (n=1340), opiate/opioid drugs, including heroin/morphine and methadone, either alone or in combination with other drugs, accounted for 43% of deaths.
- ◆ Other opiate/opioid analgesics, either alone or in combination with other drugs, were implicated in 228 (17%) cases. Dextropropoxyphene (contained in the compound preparation, co-proxamol) accounted for 60% of these deaths. Opiate/opioid analgesics were implicated in 3 out of the 5 deaths in cases under the age of 14 years; they were also the main drug implicated in cases over the age of 55 years.
- ◆ Cocaine, alone or in combination with other drugs, accounted for 51 deaths. MDMA, alone or in combination with other drugs, accounted for 17 deaths.
- ◆ Methadone was implicated in 11% of cases; these deaths were more likely to be the result of illicit rather than prescribed medication.
- ◆ Antidepressants were implicated in 20% of cases. These cases were more likely to have died from their own prescribed medication than from drugs prescribed for others.
- ◆ Seven hundred and sixty cases were receiving prescribed psychoactive medication at the time of their death. Of these, 60% had this prescribed medication implicated in their death.

Surveillance Report

- ◆ Seven hundred and sixty drug-related deaths were reported to the programme by 103 coroners in England and Wales for the period July to December 1999.
- ◆ The demographic profile remains consistent with that of previous reports. The majority of cases were males (72%) and under the age of 45 years (75%).
- ◆ Brighton & Hove recorded the highest annual drug-related death rate (12.5/100,000 population), followed by Furness (8.8/100,000), Liverpool (7.6/100,000), Inner North London (6.4/100,000) and Newcastle Upon Tyne (6.2/100,000).
- ◆ Gamma-hydroxybutyrate (GHB) accounted for 2 deaths. Both occurred when GHB was taken in combination with alcohol.

I. Introduction

This is the fifth report in the series providing information on drug-related deaths in England and Wales.

The first part of the report takes the form of an annual review of information received from coroners in England and Wales as a result of drug-related deaths that actually occurred in 1999. Notifications of 1413 deaths during this period were received from a total of 97 coroners' jurisdictions, and these are analysed in this report. Since the time lapse between the date of death and the conclusion of the inquest varies considerably from case to case, there will undoubtedly be further deaths in 1999 that are not covered by this report. However, these cases will be analysed in future reports.

This second part of the report relates to the surveillance period July to December 1999, which has not been published previously. These figures reflect inquests on drug-related deaths reported to np-SAD during that period and may include deaths that actually occurred outside of that period. In order to provide continuity with previous np-SAD surveillance reports, changes in the semi-annual death rates since January 1998 are also highlighted (Appendix 10).

A further 480 inquest reports were received in 1999 on deaths occurring in 1997 and 1998. These cases are presented in Appendix 3 and their distribution according to coroner's jurisdiction are summarised in Appendix 2.

It is clear from the concern and interest generated by drug-related mortality internationally that large scale national mortality studies are vital; unfortunately they remain rare. The White Paper "Tackling Drugs to Build a Better Britain"² and the UK Anti-Drugs Co-ordinator's Annual Report³ set specific national targets for the UK and highlight the need to reduce the number of drug-related deaths. The analytical summary of data contained in np-SAD reports, together with the ability to identify local, regional and national trends and make comparisons across jurisdictions, will be of significant assistance in monitoring performance against national targets.

The Advisory Council on the Misuse of Drugs (ACMD) recently published a report on 'Reducing drug related deaths'¹. Amongst the many recommendations made by the ACMD's Prevention Working Group are some relating to the need to define what is meant by a drug-related death; improving the amount and quality of data collected; and issues surrounding the role of coroners in this process. Several studies^{4,5} highlight the problems

with current mortality data, especially in relation to drug-related deaths. Official reports are often incomplete in their coverage of drug-related deaths, concealing the actual cause of death as a result of its stigmatising status. There are problems also with defining the size of the population. Furthermore, defining appropriate base populations for such studies is difficult due to the variety of licit and illicit drugs involved, amount of drug use required to define the population at risk and the problems of identifying the "hidden" population not known to the legal or treatment systems. Mortality rates for heterogeneous populations of drug users have limited application if they cannot be assessed in relation to individual characteristics (demography, patterns of use, etc). Prospective studies are useful for their confirmatory value of retrospective studies.

In spite of the difficulties outlined, the information gathered by retrospective mortality studies remains of value in directing policy and shaping treatment services.

Several studies provide examples of this role to inform treatment provision. Fugelstad *et al*'s study⁶ comparing mortality rates between HIV positive drug users in treatment programmes and those not in treatment found that the HIV positive addicts in treatment programmes had a lower risk of dying from poisoning or violence than those who were not in treatment. Sweden's methadone maintenance treatment programme is open to only a fixed number of addicts who must fit the programme's criteria. The outcome of Fugelstad *et al*'s study provides a means of evaluating the effectiveness of the treatment programme together with information to inform future policy.

Mortality studies can also inform prescribing policy and highlight areas of concern in existing treatment responses. Isacson *et al*⁷ noted that suicide occurs mainly in individuals with a psychiatric disorder, in particular, depression. They used this premise as the base from which to explore the drugs used in suicide. The findings of their study provided advice on prescribing practice and drew attention to areas of concern in the current management of depression. As with a number of other studies^{8,9}, they noted that although some took medication prescribed for others, the majority of antidepressant suicides probably represented therapeutic failures due to therapy refractoriness or non-compliance. This type of information guides clinicians in prescribing the newer type of antidepressants which take the form of selective serotonin re-uptake inhibitors (SSRI's). The study also raises the possibility that deaths resulting from hypnotic/sedatives may include a proportion of individuals who were depressed but were treated symptomatically. In conclusion, the authors suggest that the risk of psychotropics in suicide should not

prevent their prescription but rather should engender a culture of vigilance and monitoring among health care professionals. By specifically reporting on deaths due to antidepressants in combination with other drugs such as hypnotic/sedatives, np-SAD is able to assist in this monitoring process.

Mortality studies have also been used to identify at risk population groups and lifestyles.^{4,5,10} Longitudinal analysis of mortality data can show changes in trends among different sub-populations.^{11,12} They reveal the importance of monitoring age, sex, marital status, employment status, etc. Such studies have raised awareness that cause of death among heroin addicts may not always be the result of a stereotypical overdose facilitated by increased availability and changes in purity. They also highlight the risks associated with poly-substance use, especially that involving alcohol, which may even reduce the individual's effective tolerance to heroin.

Enforcement and treatment statistics show steady and significant increases in cocaine use from 1991-1998 and this is reflected in the rise in cocaine related deaths¹³. In addition, the recent spate of deaths in injecting drug users in the UK and Ireland, as a result of heroin contaminated with a type of bacteria known as *Clostridium novyi*¹⁴, confirms the need for frequent and consistent surveillance to alert medical practitioners promptly to any emerging risks and to provide evidence-based advice on the appropriate response.

There is also the view that increased availability of methadone poses a significant risk resulting in greater mortality. Recent studies¹⁵ suggest that among the addict population, at least, this is not entirely the case. The strength of np-SAD is that all drug-related deaths are monitored, not only the addict population, thus assessing the risk in the population as a whole.

Drug-related deaths as reported by comparable registers

In this report, data obtained from coroners in England and Wales were compared to the most recent data published by the Office of National Statistics (ONS)¹⁶ and the Drug Abuse Warning Network (DAWN)¹⁷. The objectives of this comparison were to (i) examine any changes in the pattern and distribution of drug-related deaths between 1993-1997 and 1999 and (ii) identify the difference in drug-related death distribution between np-SAD data and DAWN's most recent data.

International differences in mortality rates for drug-related deaths may reflect varying definitions of what constitutes a drug-related death, level of access to healthcare, differing patterns and history of

drug use, differences in the accuracy and use of toxicology, etc.

The Home Office Statistical Bulletin published April 2000 reported on all deaths notified to coroners in England and Wales in 1999¹⁸. The report covers a number of inquest verdicts: homicide, suicide, self neglect, dependence on drugs, non-dependent drug abuse, want of attention at birth, industrial disease, accident/misadventure, stillborn, natural causes, open and other.

The Home Office Bulletin notes 573 cases where a verdict of dependence on drugs or non-dependent abuse of drugs was recorded by the coroner in 1999. The total number of inquests in 1999 was 24,375 and drug abuse accounted for 2.35% of cases. This is a much lower percentage than that reported by the np-SAD for the same period; this under-reporting may arise from drug-related deaths being classified under other verdicts, such as suicide and accident/misadventure. The np-SAD resolves this by the use of the ICD-10 codes, which considers both the verdict and the underlying cause of death.

The Office of National Statistics (ONS) publishes its annual mortality figures in September of each year for the preceding year. The ONS database of drug-related poisoning deaths contains all deaths in England and Wales where the underlying cause of death is assigned to given criteria of ICD9 codes. The data are entered in such a way that deaths can be sorted, counted and analysed according to any substances mentioned on the death certificate. Preliminary figures from this database for 1998 were included in the recent ACMD report 'Reducing drug-related deaths'¹. Figures released on 24th August 2000 indicated that 2,922 deaths occurred in 1998 as a result of drug-related causes. This figure represents a small increase compared with recent years. The ONS identifies a number of problems associated with quantifying deaths from specific drugs. Coroners may mention any drugs implicated in the death in the cause of death section of the coroner's certificate of death. However, such information is not always recorded by the coroner or is recorded only in the broadest terms, e.g., "drug overdose". Furthermore, deaths often involve a mixture of substances used in combination with alcohol. Where more than one substance is recorded there is no indication of which substance is more likely to be the cause of death. The ONS is therefore unable to provide precise figures on the number of deaths which can be attributed to specific substances from the data collected at death registration. ONS estimates of the number of deaths due to specific drugs are therefore based on the number of deaths where the underlying cause of death was drug-related and where the drug is mentioned on the coroner's certificate. The figures presented, therefore, should be seen as an esti-

mate of the numbers of deaths associated with particular substances, rather than the exact number directly due to these substances.

In the USA, the Department of Health and Human Services published a report in April 2000 containing information on drug abuse-related Medical Examiner cases collected through the Drug Abuse Warning Network (DAWN) for the year 1998¹⁷. The Office of Applied Statistics within the Substance Abuse and Mental Health Services Agency, was responsible for the operation of DAWN data collection and for the publication of the report. DAWN is an ongoing drug abuse data collection system. Its major objectives are to identify substances associated with drug abuse, including monitoring patterns and detecting new drugs of abuse. The system also assesses associated health hazards and provides national and local data for policy and programme planning. To be reported by DAWN, the deceased person must be between the ages of 6 and 97 years; the death must be drug-induced or drug-related; involving illicit or non-medical use of licit drugs, and the reason for taking the substance must be for psychic effect, dependence or suicide.

The medical examiners participated in DAWN on a voluntary basis. In 1998, 141 medical examiner's facilities in 42 metropolitan areas throughout the USA submitted reports to DAWN. The participating medical examiners submitted a total of 10,123 drug-related death reports. Unlike np-SAD, these included deaths due to non-psychoactive drugs.

The Role of the Coroner – Mr M J C Burgess, Hon. Secretary, Coroners' Society of England & Wales

Coroners have a mandate to investigate those deaths which are 'violent or unnatural', 'sudden of unknown cause' or 'in prison'. The investigation process, the inquest, is normally preceded by a post mortem examination, also called an autopsy or necropsy. A pathologist will examine the body, both externally for signs of injury, bruising and discolouration, and then internally, with each of the major organs and body systems being subjected to detailed examination. The pathologist may also extract some body fluid or tissue for more detailed examination and testing. These tests are of several types – toxicology for drugs and poisons (their presence and absence and their concentrations); bacteriology and virology to identify any organisms which may be present in the body; and histology for changes to tissue possibly brought about by chronic changes in the body through a disease process or longer term abuse.

The pathologist's work, with these various examinations and their results, is one of the foundation

stones upon which the coroner's investigation lies. The coroner will also seek information from any doctor who might have treated the deceased or may have some knowledge of him and his lifetime health condition, as well as from the family and friends. Ideally, family and friends are able to give the coroner a great deal of information about the deceased, his or her problems and lifestyle, although sometimes they are in 'denial' and are of little help in explaining the death. Finally, there may be information from two other resources – the group of people with whom the deceased may have been with just before his or her death, and those who found the body and alerted the emergency services.

All these sources of information can be useful and become evidence when the case comes to court. However, because it may be illegal to be in possession of the substance which may have caused or made a significant contribution to the death and because there is a natural reluctance on the part of families to admit that one of their number is "involved in the drugs scene", the completeness and integrity of information available to the coroner is often in doubt.

In the coroner's court, the coroner has a duty to warn witnesses that any answers given to questions they are asked may incriminate them. There is often, therefore, a less than complete picture obtained in a coroner's inquest as to the precise circumstances in which a death has come about as the eye witness may, themselves, have been involved in an activity which may incriminate them.

A coroner will hear the evidence and, on the basis of the evidence, reach conclusions. The questions which the coroner is required to address and seek answers to are: who was the deceased person and how, when and where did the death come about? In addressing the question 'how', the coroner is required to find out how, in this particular case the cause of death arose, rather than answer a more general question "in what broad circumstances did the death occur?" The conclusions are set out in a document called an inquisition, one part of which seeks to categorise the death into a recognised verdict (accident, suicide, etc.)

There are at present two conclusions (or verdicts) which primarily relate to drug deaths: "that the deceased died from non-dependent abuse of drugs" and "that the deceased died from dependence on drugs". These conclusions are not universally returned by coroners and, as a result, some of these deaths are categorised as accidental.

In determining the cause of death, the coroner will consider the circumstances given in evidence for each individual case and subsequently reach the

relevant conclusions. It will be for others to take a wider view, looking at trends and reaching social or epidemiological conclusions.

However, from an individual coroner's perspective, the cases are sufficiently frequent for a number of observations to be made :

- * The deaths do not always arise from a single drug or substance – there may be a cocktail or variety of substances which have, in combination, proved fatal. The combination may include alcohol and also nominally therapeutic drugs (eg. Diazepam).

- * The deaths are not always from the poisoning effects of the substances but may be from an asphyxia arising from the position into which the deceased collapsed, placing a limitation on his breathing (a "postural asphyxia"), which may also be attributed to the sedatory effects of the drugs.

- * The deaths often arise at drug levels which, in the past, the deceased had apparently been able to tolerate but which, when taken after a period of abstinence, can no longer be taken.

- * Occasionally there appears to be some evidence that the deceased was administered drugs by others and the amount given was fatal – if proven, then the circumstances may amount to a criminal charge of manslaughter.

- * The deceased is usually male; occasionally the death occurs in someone who has never apparently used drugs before.

- *The chronic, or long-term, effects of drug abuse may be seen in the incidence of certain kinds of disease, some of which may, in time, prove fatal.

II. The National Programme on Substance Abuse Deaths (np-SAD)

The principal aim of the np-SAD is to prevent deaths due to the misuse of illicit and licit drugs and alcohol in addicts and non-addicts in the United Kingdom. The programme offers a comprehensive prevention package to Drug Action Teams, Health Authorities and other organisations with a mission to tackle the problem of drug-related deaths.

The programme has the following objectives:

- to collect and collate drug-related mortality data;
- to develop and maintain a computerised surveillance system;
- to examine trends, e.g. geographic; demographic; drugs implicated; method of death;
- to use the data as an indicator to estimate the prevalence of substance problems;
- to collaborate in research on substance related mortality with relevant agencies, locally, nationally and internationally; and
- to disseminate information on drug-related mortality to the scientific community, clinicians, policy makers and other interested parties.

As well as dealing with aggregated anonymised data, the np-SAD team can conduct in-depth psychological autopsies on individual cases and carry out confidential inquiry exercises if requested. The team also provides analysis of data for specific Drug Action Teams and Health Authority areas on request.

As a consequence of the work to date, information on the trends and patterns of death among UK drug misusers, including the impact of illicit and prescribed drugs, has been made available^{9,11,12,19}.

Information on the administrative structure, the various databases and data sources held by np-SAD are presented in Appendix 6. A copy of the standard data collection form is reproduced in Appendix 7.

What is a case?

A case is defined as a death where any of the following criteria are met at an inquest or fatal accident inquiry:

- one or more psychoactive substances* directly implicated in death;

- history of dependence or abuse of psychoactive drugs; or
- presence of Controlled Drugs** at post mortem.

[Note that deaths where solvents and other volatile substances are implicated alone are NOT included. Information on this is collected by the Department of Public Health Sciences at St. George's Hospital Medical School. Alcohol is included only when implicated in combination with other qualifying drugs]

* “psychoactive” substances are those having a direct effect on perception, mood, cognition, behaviour or motor function. Typically these include opiates and opioid analgesics, hypnotics, sedatives, antidepressants, anti-epileptics, anti-psychotics, hallucinogens and stimulants such as amphetamines and cocaine

** “Controlled Drugs” are those drugs specifically mentioned in the Misuse of Drugs Act (1971) - these include opiates, cocaine, amphetamines, cannabis, hallucinogens and most benzodiazepines.

Who is a drug abuser/dependent?

A drug abuser/dependent case is defined as one with a history of substance abuse where one or more of the following criteria are met:

- reported as a known illicit drug user by the coroner, based on evidence obtained at inquest;
- prescribed substitute medication for drug dependence;
- presence of an illicit drug at post mortem, where not prescribed; or
- presence of any additional information on the coroner's report suggestive of a history of drug abuse, and where such a history fulfils ICD-10 criteria

Statistical analysis

Due to the nature of the information collected by the programme, i.e. drug-related deaths as reported by the coroners, this is an observational study. Hence, statistical methods employed are based on proportions and ratios. Where the data include proportions of incidence for particular groups of interest, the ratio of the proportions forms a measure of the relative risk in one group compared with that of the other. These scales of measurement are generally known as point estimates.

Although point estimates can be calculated they do not represent the “true” values. Each point

estimate is subject to random variation. Confidence Intervals (CI) provide an indication of the range in the true values for the population as a whole, which would be expected in future investigations. The methods used for quantitative data relied mainly on complex assumptions of distributional form. It may be experienced that the assumptions are not satisfied. In such cases methods known as distribution free methods can be applied, also known as Non-parametric tests (Mann-Whitney).

The data were analysed using SPSS for Windows version 9.

1. Demography

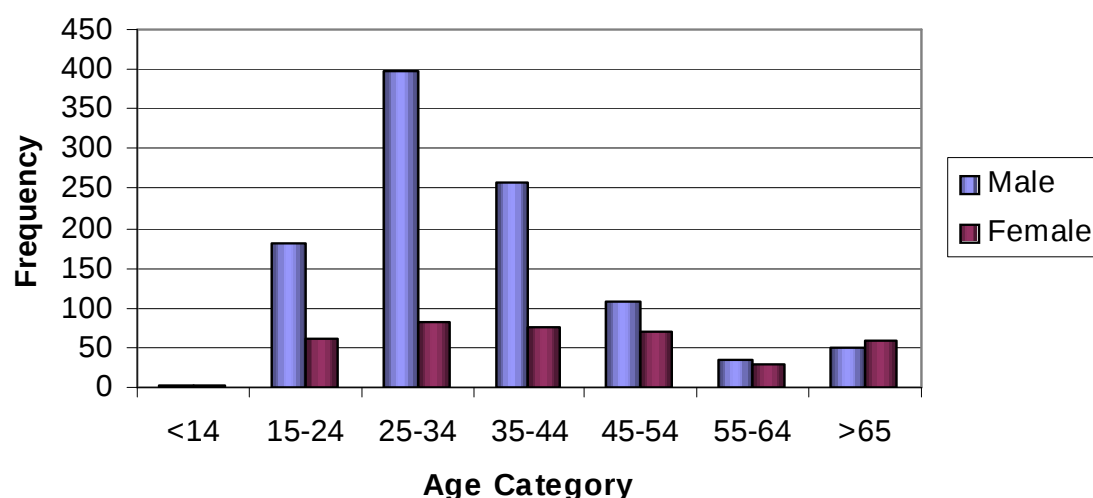
Notifications of 1413 drug-related deaths occurring in 1999 were received from a total of 97 coroners in England and Wales. The majority (73.2%) of the cases were male. The median age at death was 34 years, with 75.2% being under the age of 45 years (semi-interquartile range 9.0) (Fig. 1).

Approximately 51.2% of cases were unemployed and 40.4% of cases were living alone at the time of their death (Table 1).

III. Profile of Cases

Table 1 Demographic Variables

		Jan-December 1999 (%) N=1413
Gender	Male	73.2
	Female	26.8
Employment Status	Unemployed	51.2
	Employed	29.0
	Childcare/housewife	2.1
	Student	1.2
	Retired/Sickness/ Invalidity	12.5
	Other	0.9
	Not known	3.2
Living Arrangements	Alone	40.4
	With others	44.1
	No fixed abode	3.5
	Not known	12.0

Fig. 1. Drug-related Deaths by Age and Sex

2. Drug-related Death Rates (Appendix 2)

The jurisdictions reporting the highest annual drug-related death rates per 100,000 of the population over 16 years of age were as follows: Brighton & Hove 24.1; Blackpool & Fylde 18.7; Norwich 16.6; Furness 14.1 and Inner North London 10.6 (Appendix 2).

3. Location of Death

Location of death was reported in the majority of cases (n=1407). Approximately 67.2% died at a defined residential address (i.e. the deceased's home address or other private residential address), 25.3% died in hospital and 8.4% died elsewhere (e.g. in a public place).

4. Underlying Causes of Death

To enable comparison with various national and international data-sets all causes of death have been coded according to the International Classification of Diseases (ICD-10). This is an international standard for the classification of diseases and health related problems published by the World Health Organisation.²⁰ The proportions of ICD-10 categories of underlying causes of death were as follows:

- ◆ Accidental poisoning (X40-47) 76.5%
- ◆ Intentional self-poisoning (X60-67) 19.2%
- ◆ Other (e.g. natural causes, hanging, unascertained) 4.3%

5. Substances Implicated in Death (Table 2)

5.1 All Substances

Drugs implicated in death were not specified in 73 cases. Of the remaining cases (n=1340), the principal substances implicated were: heroin/morphine (32.5%); antidepressants (20.5%); alcohol in combination with other substances (20.2%); other opiate/opioid analgesics (17.0%); hypnotic/sedatives (11.2%) and methadone (11.0%).

5.2 Single Substances

The following substances, as the sole implicated drug, accounted for 672 (50.1%) deaths: heroin/morphine (19.5%); antidepressants (12.5%); other opiate/opioid analgesics (6.9%); methadone (4.7%); hypnotic/sedatives (2.3%); amphetamines (1.3%); cocaine (1.5%) anti-psychotics (1.0%); MDMA (0.4%).

Table 2 Psychoactive Substances Implicated in Death, January to December 1999

Drug Category	No. of cases where no other substance implicated (n=1340) Jan-Dec 1999	Total no. of cases where drug Implicated (n=1340) Jan-Dec 1999
Heroin/morphine	262 (19.5%)	436 (32.5%)
Antidepressants	167 (12.5%)	274 (20.5%)
Other opiate/opioid analgesics	92 (6.9%)	228 (17.0%)
Methadone	64 (4.7%)	147 (11.0%)
Hypnotic/sedatives	31 (2.3%)	151 (11.2%)
Anti-psychotics	14 (1.0%)	31 (2.3%)
Amphetamines	17 (1.3%)	38 (2.8%)
Cocaine	20 (1.5%)	51 (3.8%)
Alcohol		272 (20.2%)
MDMA	5 (0.4%)	17 (1.3%)
Cannabis	0	3 (0.2%)

Note: The total frequency in the third column exceeds 1340 cases because many cases have more than one drug implicated in their death. Psychoactive substance-related deaths (see definition on p.12) excludes deaths caused by other drugs alone, e.g. non-opioid analgesics, such as paracetamol. Alcohol is only included in combination with other substances.

6. Prescribed Psychoactive Medication (Table 3)

Seven hundred and sixty cases were receiving prescribed psychoactive medication at the time of their death. Prescribed medications were reported in the following proportions for these therapeutic drug classes: hypnotic/sedatives (51.4%); antidepressants (47.0%); other opiate/opioid analgesics (27.9%); anti-psychotics (18.5%) and methadone (15.1%).

“Polypharmacy”, i.e. multiple prescriptions of psychoactive drugs, occurred in 27.6% of cases.

IV. Associated Risks

1. Prescribed Psychoactive Drugs (Table 3)

Of the 760 cases prescribed psychoactive medication at the time of their death, 60.3% had those drugs implicated in their death.

1.1 Methadone

Methadone, alone and in combination with other drugs, was implicated in 147 cases. Of these, 36% were receiving prescribed methadone prior to their death, compared to 64% who obtained methadone illicitly (percentage ratio = 0.6, 95% CI = 0.4-0.7).

Table 3 Prescribed Psychoactive Medication, January-December 1999

Drug category	Jan-Dec 1999 No. of cases on prescribed psychoactive medication (n=760)	Jan-Dec 1999 No. of cases where same drug implicated in death
Hypnotic/sedatives	391 (51.4%)	90 (23.0%)
Antidepressants	357 (47.0%)	166 (46.5%)
Other opiate/opioid analgesics	212 (27.9%)	108 (50.9%)
Anti-psychotics	141 (18.5%)	23 (16.3%)
Methadone	115 (15.1%)	53 (46.0%)
Anti-epileptics	37 (4.9%)	6 (16.2%)
Anti-parkinsons	30 (3.9%)	3 (10%)
Heroin/morphine	16 (2.1%)	8 (50.0%)
Amphetamines	9 (1.2%)	1 (11.1%)

Note: In several cases the deceased was prescribed more than one psychoactive drug, hence the total percentage in column 3 exceeds 100.

Methadone alone was implicated in 64 cases. Of these, 45.3% were receiving prescribed methadone, compared to 54.7% who obtained the drug from illicit sources (Percentage ratio = 0.8, 95% CI = 0.6-1.2)

Altogether, methadone-related deaths are more likely to arise from illicit than prescribed methadone.

1.2 Antidepressants

Antidepressants, alone and in combination with other drugs, were implicated in 274 cases. Of these, 60.5% were receiving prescribed antidepressants at the time of their death, compared to 39.5% who had used drugs prescribed for others (Percentage ratio = 1.5, 95% CI = 1.3-1.8)

Antidepressants alone were implicated in 167 cases. Of these, 63.5% were receiving prescribed medication, compared to 36.5% who had used drugs prescribed for others (Percentage ratio = 1.7, 95% CI = 1.4-2.2)

Those receiving prescribed antidepressants were significantly more likely to have that class of drug implicated in their death, either in combination or as the sole drug, compared to those who had used drugs prescribed to others.

1.3 Other opiate/opioid analgesics

Other opiate/opioid analgesics (e.g. dihydrocodeine, dextropropoxyphene) alone and in combination with other drugs, were implicated in 228 cases. Of these, 47.3% were receiving prescribed opiate/opioid analgesics prior to their death, compared to 52.7% who obtained the drug by other means (Percentage ratio = 0.9, 95% CI = 0.7-1.1)

Other opiate/opioid analgesics alone were implicated in 92 cases. Of these, the drugs were prescribed in 55.4% of cases and obtained by other means in 44.6% of cases (Percentage ratio = 1.2, 95% CI = 0.9-1.7)

1.4 Hypnotic/sedatives

Hypnotic/sedatives, alone and in combination with other drugs, were implicated in 151 cases. Of these, 59.6% were receiving a prescription for this class of drug, compared to 40.4% who obtained them illicitly (Percentage ratio = 1.5, 95% CI = 1.2-1.9)

Thirty one cases had hypnotic/sedatives alone implicated in their death, of whom 25 received the drug via prescription.

2. Sex and accidental/intentional death

Approximately 82% of male cases died of accidental

poisoning, compared to 62% of female cases (Percentage ratio = 1.3, 95% CI = 1.2-1.4) This suggests that male cases are more likely to die as a result of an accident than female cases.

Conversely, 35% of females died as a result of intentional self poisoning, compared to 14% of male cases (Percentage ratio=2.5, 95% CI=2.1-3.1) This suggests that females are twice as likely to die of intentional self poisoning than male cases.

3. Age and accidental/intentional death

Approximately 83% of cases aged 44 years and under died as a result of accidental poisoning, compared to 57% of those aged 45 years and over (Percentage ratio = 1.5, 95% CI = 1.3-1.6).

Conversely, 38% of cases aged 45 years and over died as a result of intentional self poisoning, compared to 13% of cases under 44 years of age (Percentage ratio = 2.9, 95% CI = 2.4 -3.6)

4. Age and Drug Implicated in Death

Table 4 shows the distribution of deaths in terms of drug category (alone or in combination) most frequently implicated with age group.

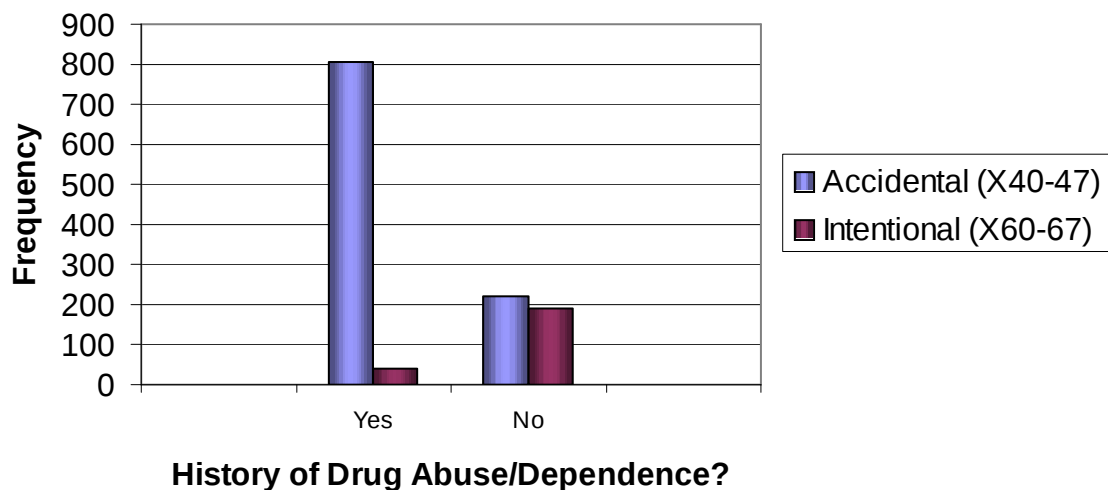
5. Gender and Drug Implicated in Death

Male: Heroin/morphine, alone or in combination with other drugs, was implicated in 38.2% of male cases; alcohol, in combination with other drugs, in 21.3%; antidepressants, alone or in combination with other drugs, in 14.4%; other opiate/opioid analgesics, alone or in combination with other drugs, in 13.8% and methadone, alone or in combination with other drugs, in 12.2%.

Female: Antidepressants, alone or in combination with other drugs, were implicated in 35.4% of all female cases; other opiate/opioid analgesics, alone or in combination with other drugs, in 25.2%; alcohol, in combination with other drugs, in 15.3%; hypnotic/sedatives, alone or in combination with other drugs, in 13.0% and heroin/morphine, alone or in combination with other drugs, in 11.2%.

Table 4 Age and Drug Implicated in Death, January – December 1999

Age Group	n	Drug Category (alone or in combination) most frequently implicated with age group
Under 14 yrs	4	Other opiate/opioid analgesics (3/4)
15-24 yrs	254	Heroin/morphine (46%)
25-34 yrs	521	Heroin/morphine (41%)
35-44 yrs	359	Alcohol in combination with other substances (30%) Heroin/morphine (30%)
45-54 yrs	187	Antidepressants (32%)
55-64 yrs	74	Other opiate/opioid analgesics (30%)
Over 65 yrs	114	Other opiate/opioid analgesics (34%)

Fig. 2. Accidental/Intentional Death by Drug Abuse History

V. Drug Abuse/Dependence

Cases with a history of drug abuse/dependence (n=884) were compared to those without such a history (n=424) on the following variables: demography, location of death, and underlying cause of death.

One hundred and five cases were reported as “not known” with respect to history of drug abuse/dependence. They were excluded from further analysis.

Demography

In comparison with non drug abusers (NDAs), drug abusers/dependents (DAs) were more likely to be male, 86% compared to 48% (Percentage ratio = 1.8, 95% CI = 1.6-2.0) and twice as likely to be less than 45 years of age, 91% compared to 44% (Percentage ratio = 2.1, 95% CI = 1.9-2.3). The median age at death for DAs was 30 years, while that for NDAs was 47 years (Mann-Whitney U=77761.5, $p < 0.0001$, semi- interquartile range 9.0).

There was no significant difference between the two groups with respect to living arrangements. However DAs were twice as likely to be unemployed at the time of their death than NDAs (Percentage ratio = 2.3, 95% CI = 2.0-2.7)

Location of Death

There was no significant difference between DAs and NDAs with respect to the location of their death. In both cases the majority died at a defined residential address (DAs 65%, NDAs 69%).

Hospital deaths accounted for the majority of the remaining cases (DAs 26%, NDAs 24%).

Underlying Causes of Death

Accidental poisoning accounted for 91% of deaths in DAs, compared to 52% of NDA deaths (Percentage ratio = 1.8, 95% CI = 1.6-1.9).

Conversely, 45% of NDA deaths were the result of intentional self poisoning, compared to 5% of DA deaths (Percentage ratio = 9.1, 95% CI = 6.7-10.0)

VI. Comparisons with other

Registers

Findings of this report were compared with those from the Office of National Statistics (ONS)¹⁶ and the Drug Abuse Warning Network(1998) (DAWN) reported in April 2000 (USA)¹⁷.

ONS

The distribution of drug-related deaths presented in this report and that of the ONS report (1993-1997) were compared in relation to the underlying cause to which they were assigned. Some major differences between the two registers were observed; in particular, the ONS reported a greater proportion of suicides than np-SAD (percentage ratio = 1.4, 95% CI=1.3-1.5). Furthermore proportions of deaths due to drug dependence were significantly higher as reported by np-SAD compared to ONS (percentage ratio = 1.4, 95% CI=1.3-1.5). Otherwise, patterns were similar, as might be expected.

DAWN

Demographic profile

The number of drug-related deaths reported to DAWN in 1997 was 9,565 and in 1998, 10,091, an increase of 5% between these two periods.

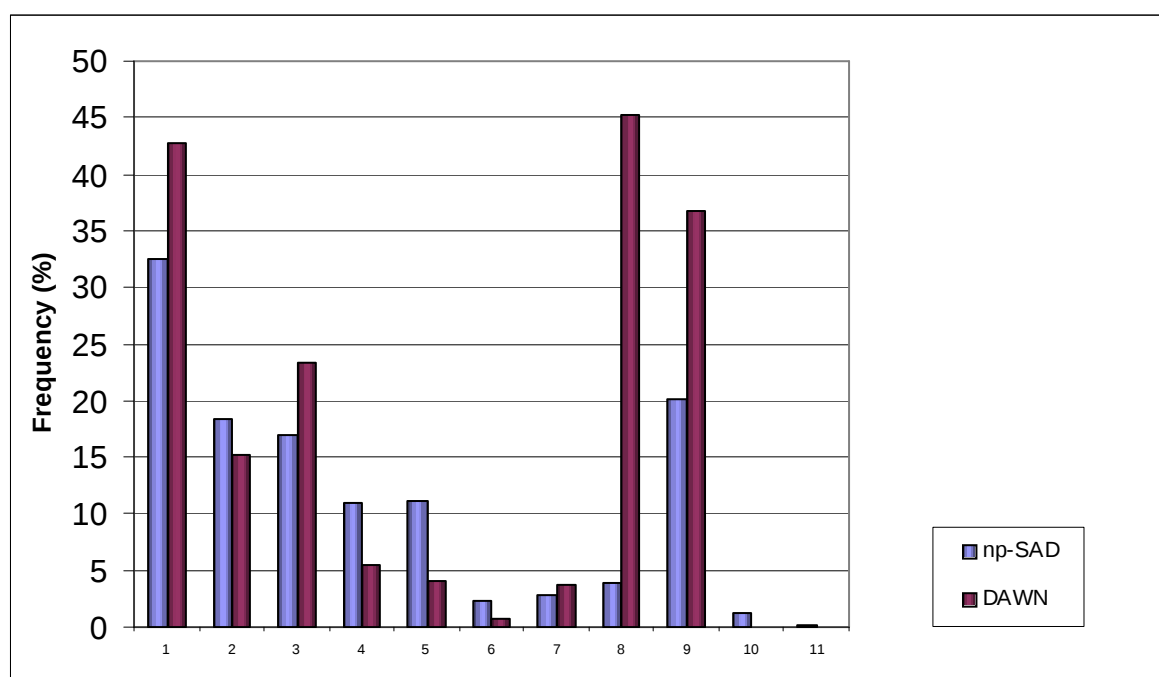
In 1998, the majority of cases were male (73.5%), a similar figure to that reported by np-SAD in 1999 (73.2%). There were no significant differences in gender distribution between the two locations (Percentage ratio = 1.00, 95% CI = 0.85-1.19).

np-SAD reported a significantly greater proportion of drug-related deaths under the age of 35 years (51.3%), compared to DAWN (29.7%, Percentage ratio = 1.7, 95% CI = 1.2 – 2.5). Conversely, there was a significantly higher proportion of reported deaths over the age of 34 years as reported by DAWN (70.0%) compared to np-SAD (48.7%) (Percentage ratio = 1.4, 95% CI = 1.1 – 1.8)

Substances implicated in death

The substances most frequently implicated in death as reported by DAWN were: cocaine (43.3%); heroin/morphine (42.8%); alcohol in combination with other substances (36.%).

When comparing the two registers, DAWN reported a significantly higher proportion of deaths than np-SAD where the following substances were implicated: heroin/morphine, cocaine, alcohol in combination with other substances, other opiate/opioid

Fig. 3 Substances implicated in death – a comparison of npSAD and DAWN Data

Key: (1) Heroin/Morphine (2) Antidepressants (3) Other opiate/opioid analgesics (4) Methadone (5) Hypnotic/sedatives (6) Anti-Psychotics (7) Amphetamines (8) Cocaine (9) Alcohol (10) MDMA (11) Cannabis

analgesics. Conversely, np-SAD reported a significantly higher proportion of deaths than DAWN where the following substances were implicated: methadone and hypnotic/sedatives. In addition, a significantly greater proportion of deaths related to anti-psychotics and anti-depressants were recorded by np-SAD compared to DAWN. Conversely a significantly greater proportion of amphetamine-related deaths was reported by DAWN compared to np-SAD (Appendix 4; Figure 3).

VII. Commentary

This is the first **annual** review produced by the National Programme on Substance Abuse Deaths. This annual review is different from the semi-annual reports in that it reports on deaths that actually occurred in 1999, even where inquests were completed in 2000. The review, therefore, provides a baseline for monitoring drug-related deaths nationally, in line with the ACMD recommendations and the UKADCU requirements in the national strategy.

The demographic profile of cases remains consistent with previous semi-annual reports. The majority of cases were males under the age of 45 years and 62% of the sample were drug abusers/dependents, as defined by the programme.

Brighton & Hove recorded the highest annual death

rate (24.1/100,000) for 1999. This rate is consistent with previous reports and there are indications that the local Drug Action Team and Health Authority in East Sussex are taking steps to address this problem.

Blackpool and Fylde reported the second highest annual death rate (19.0/100,000); Norwich reported the third highest annual death rate (21.5/100,000) and Furness the fourth highest (16.6/100,000). Further areas of concern with relatively high annual drug-related death rates include Inner North London (10.6/100,000), Liverpool (10.1/100,000) and Hitchin (10.0/100,000).

These figures represent emerging trends and require further investigation to determine a local response.

The lowest annual death rates were reported by Dereham (0.6/100,000), South Staffs (1.1/100,000), Eastern London (1.2/100,000), Lowestoft (1.3/100,000) and Teeside (1.4/100,000).

Other opiate/opioid analgesics, alone or in combination with other drugs, were implicated in 17% of all cases (n=228). The majority of cases were under 45 years of age (55%). Approximately 57% of cases died as a result of accidental self-poisoning and 43% as a result of intentional self-poisoning with drugs of this category.

Other opiate/opioid analgesics were implicated in 25%

of all female cases and are the most common cause of death in those aged 14 years and below and in cases aged 55 years and over. Easy accessibility to opiate/opioid analgesics may have accounted for the high proportion of deaths observed in these age groups.

Within this category, dextropropoxyphene, which is contained in the compound preparation co-proxamol, accounted for 60% of the deaths (n=150) either alone or in combination with other substances. Of these, 55% (n=82) were under the age of 45 years and 50% (n= 75) were the result of intentional self-poisoning. This finding is consistent with previous reports and supports a recent study of suicide in young addicts¹² which concluded that the most common drug used in self-poisoning was co-proxamol. It is possible that dextropropoxyphene deaths continue to go under recorded as the cause of death may be wrongly attributed to the paracetamol component of compound preparations such as co-proxamol. More training and resources are therefore required to enable coroners to ascertain deaths due to compound preparations.

A total of 51 cocaine-related deaths, alone or in combination with other drugs, were reported for 1999. Cocaine was the sole drug implicated in 11 cases. This figure is consistent with the view expressed in a recent report examining the widely reported increase in cocaine use.¹³ In addition, previous np-SAD surveillance reports have indicated a steady increase in cocaine-related deaths since 1997.

In 1999, the majority of cocaine-related cases were under the age of 45 and all died from accidental poisoning. Demographically, 49% of cases were living with others at the time of death, which reflects previous trends. Unlike in the semi-annual reports, however, the majority of cases were unemployed. The tendency for deaths to occur when cocaine is used in combination with other substances remained consistent.

Antidepressants alone or in combination with other drugs, were implicated in approximately 20% (n=274) of cases. This figure is consistent with findings of a recent study examining suicide trends amongst registered addicts over a 25 year period.¹⁹

Of the antidepressant-related deaths, 60% were receiving prescribed antidepressants at the time of their death, compared to 40% who had used drugs prescribed for others. In addition, 43% of the deaths were due to intentional self-poisoning. Antidepressants were implicated in 35% of all female cases and were the drugs most frequently implicated in the 45-54 age group (32%). These figures highlight the importance of careful assessment and

tional prescribing of antidepressants by GPs. The need for detailed risk assessment and risk management as part of routine prescribing practices cannot be over emphasised. It is also important for GPs to ensure that patients return any previous medication when prescribed a new antidepressant.

The relationship between drugs implicated in death and gender presents a different picture for males and females. Heroin/morphine, alone or in combination with other drugs, was the main drug implicated in males accounting for 38% of deaths, compared to 11% of females. Conversely, the main drug implicated in female deaths was antidepressants, alone or in combination with other drugs, accounting for 35% of female deaths compared to 14% of males. In addition, 35% of females died as a result of intentional self poisoning, compared to 14% of male cases, suggesting that females are twice as likely to die as a result of intentional self poisoning than males. These figures suggest that females and males are dying as a result of very different patterns of drug use. Treatment services need to be aware of these patterns, suggesting the need to tailor services appropriately for different gender groups.

A comparison was made between data from the np-SAD register and the ONS published data on drug-related deaths between 1993-1997. Given that the ONS report covered an earlier period, the differences in the proportion of suicides and deaths due to drug dependence observed in both datasets may be due to a number of factors:

1. Actual reduction in the proportion of suicides relative to accidental deaths, and in deaths due to drug dependence;
2. Difference in the details on cases obtained by the two registers and corresponding case classification; and
3. Differences in the interpretation of the term 'suicide' which some researchers consider as including open verdicts.

Consequently, a study of case definition and data validation between the two registers may prove useful.

A similar comparison was undertaken with DAWN data, indicating significant differences in drug-specific death distribution. This difference is consistent with the pattern of illicit drug use in both countries. Using the Drug Abuse Index (DAI: UNDCP, 1997), an index that is a product of the prevalence of extent of use, prevalence of injection, morbidity, and of course, mortality, cocaine and heroin were reported as having the highest DAI in the United States and UK, respectively (United Nations International Drug Control Programme:UNDCP, 1997)²¹. The findings of this review are, therefore, consistent with those of the UNDCP and confirm that mortality data are reliable indicators of the extent of drug problems.

The findings are also consistent with the recommendations of the ACMD¹ in many ways.

Firstly, this annual review has identified some areas of the UK, such as Brighton & Hove, where drug-related deaths occur rather frequently. The provision of such information enhances public awareness about the nature and extent of drug-related deaths in the locality which otherwise could have remained undetected.

Secondly, by describing the pattern of drug-related deaths according to gender, age and implicated drugs, high risk groups and circumstances can be identified and accurately targeted for intervention.

Thirdly, by indicating the extent to which prescribed drugs are implicated in these deaths, local prescribing practices can be monitored for appropriateness and modified accordingly.

Fourthly, these findings can promote participation of drug abusers in local and national prevention efforts by providing relevant information on modifiable risks for premature deaths in this population.

Fifthly, the information provided in this review can act as baseline for the UKADCUs' objective of monitoring the effectiveness of the Drug Strategy in reducing drug-related deaths.

In general, this special register, used in conjunction with other relevant registers, offers the opportunity for developing a framework for research into the predictors of drug-related deaths nationally, in a consistent fashion, over a prolonged period of time.

However, such a programme of research requires sustained funding. This is an area that deserves further consideration, and a joint initiative, by the UKADCUs, the Home Office and the Department of Health. Furthermore, the establishment and success of a programme of research on drug-related deaths, which npSAD typifies, relies largely on the goodwill and co-operation of coroners and procurators-fiscal. Consequently, adequate resources should be made available to them to ensure continued participation.

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np-SAD Surveillance Report No. 5

July – December 1999

IX. Introduction

For the surveillance report July to December 1999, there were returns from 103 coroners' jurisdictions. These included 'nil returns' (confirmation from coroners that there were no inquests involving drug-related deaths for that period). There were two less jurisdictions reporting in this period than for January to June 1999 due to mergers and boundary changes. In addition, ten jurisdictions that reported for the period January to June 1999 did not report in this period; whilst 13 jurisdictions that reported in the period July to December 1999 did not report in the previous period. There are a number of possible reasons for this such as coroners' workload preventing the notification of inquests or an assumption that a 'nil return' does not have to be reported. This highlights the importance of maintaining and resourcing a surveillance system to which coroners are willing and able to contribute on a continuous basis, and of providing appropriate training and resources to enable coroners to comply with the requirements of the system.

X. Profile of cases

1. Demography

A total of 760 drug-related deaths were reported to the programme by 103 coroners in England and Wales for the period July to December 1999. The majority of cases were male (n=544, 71.6%). The median age at death was 34 years with 75.3 % being under the age of 45 years (semi-interquartile range 8.5) (Fig.4). Fifty-one percent of cases were unemployed. Approximately 42% of cases were living alone at the time of their death (Table 5).

2. Drug-related Death Rates

The following jurisdictions reported the highest semi-annual drug-related deaths per 100,000 of the population over the age of 16 years: Brighton & Hove 12.5; Furness 8.8; Liverpool 7.6; Inner North London 6.4; and Newcastle Upon Tyne 6.2 (Appendix 9).

Fig. 4. Drug-related Deaths by Age and Sex

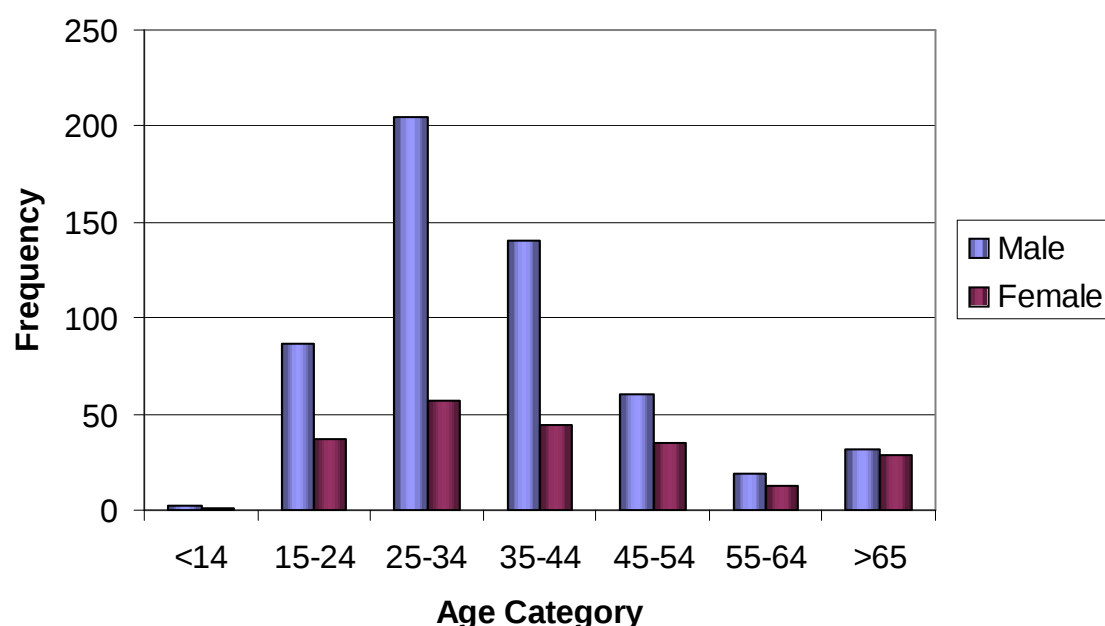


Table 5 Demographic Variables

		July-December 1999 (%) n=760
Gender	Male	71.6
	Female	28.4
Employment Status	Unemployed	50.5
	Employed	29.3
	Childcare/housewife	2.2
	Student	1.6
	Retired/Sickness/ Invalidity	12.6
	Other	0.8
	Not known	2.9
Living Arrangements	Alone	41.8
	With others	40.8
	No fixed abode	3.2
	Not known	14.2

The highest proportion of cases expressed as a percentage of the total number of inquests held was reported by Ashford & Shepway 26.2%; Wirral 17.9%; Hertford 17.6%; Hitchin 17.6%; North Manchester 17.4%.

3. Location of Death

Location of death was reported in all 760 cases. Sixty-five percent of cases died in a defined residence (i.e. the deceased's home address or other private residential address), 26% died in hospital and 8.6% died elsewhere (e.g. in a public place).

4. Underlying Causes

To enable comparison with various national and international data-sets all causes of death have been coded according to the International Classification of Diseases (ICD-10). This is an international standard for the classification of diseases and health related problems published by the World Health Organisation.¹ The proportions of ICD-10 categories of underlying causes of death were as follows (Appendix 8):

- ◆ Accidental poisoning (X40-47) 74.2%

- ◆ Intentional self- poisoning (X60-67) 21.3%
- ◆ Other (e.g. natural causes, hanging, unascertained) 4.5%

5. Substances Implicated in Death (Table 6)

5.1 All Substances

Drugs implicated in death were not specified in 30 cases. Of the remaining cases (n=730), the principal substances implicated were: heroin/morphine (28.8%); alcohol in combination with other substances (21.0%); antidepressants (17.5%); other opiate/opioid analgesics (16.6%); hypnotic/sedatives (11.0%) and methadone (11.2%).

5.2 Single Substances

The following substances, as the sole implicated drug, accounted for 332 (45.5%) deaths: heroin/morphine (16.8%); antidepressants (11.6%);

other opiate/opioid analgesics (6.4%); methadone (5.1%); hypnotic/sedatives (1.9%); amphetamines (1.1%); cocaine (1.1%) anti-psychotics (1.0%) and MDMA (0.4%).

6. Prescribed Psychoactive Medication (Table 7)

Four hundred and seventeen cases were receiving prescribed psychoactive medication in the period just prior to their death. Prescribed medications were reported in the following proportions for these

therapeutic drug classes: hypnotic/sedatives 54.9%; antidepressants 51.3%; other opioid/opiate analgesics 26.6%; methadone 13.9% .

“Polypharmacy”, i.e. multiple prescriptions of psychoactive drugs, occurred in 61% of cases. In total, opiates/opioids accounted for 42% of all prescribed psychoactive medications.

Table 6 Psychoactive Substances Implicated in Death, July to December 1999

Drug Category	No of cases where no other substance implicated (n=730) July-December 1999	Total number of cases where drug implicated (n=730) July-December 1999
Hypnotic/sedatives	14 (1.9%)	81 (11.1%)
Anti-depressants	85 (11.6%)	128 (17.5%)
Other opiate/opioid analgesics	47 (6.4%)	121 (16.6%)
Methadone	37 (5.1%)	82 (11.2%)
Antipsychotics	7 (1.0%)	19 (2.6%)
Heroin/Morphine	123 (16.8%)	210 (28.8%)
Amphetamines	8 (1.1%)	26 (3.6%)
Cocaine	8 (1.1%)	28 (3.8%)
Alcohol		153 (21.0%)
MDMA	3 (0.4%)	12 (1.6%)
GHB	0	2 (0.3%)

Note: The total frequency in the third column exceeds 730 cases because many cases have more than one drug implicated in their death. Psychoactive substance-related deaths (see definition on p.12) excludes deaths caused by other non-psychoactive drugs alone, e.g. non-opioid analgesics, such as paracetamol. Alcohol is only included in combination with other substances.

Table 7 Prescribed Psychoactive Medication, July -December 1999

Drug category	July-Dec 1999 No. of cases on prescribed psychoactive medication (n=417)	July-Dec 1999 No. of cases where same drug implicated in death
Hypnotic/sedatives	229 (54.9%)	47 (20.5%)
Antidepressants	214 (51.3%)	97 (45.3%)
Other opiate/opioid analgesics	111 (26.6%)	53 (47.7%)
Anti-psychotics	86 (20.6%)	14 (16.3%)
Methadone	58 (13.9%)	30 (51.7%)
Anti-epileptics	18 (4.3%)	4 (22.2%)
Anti-parkinsons	16 (3.8%)	1 (6.2%)
Heroin/morphine	6 (1.4%)	4 (66%)
Amphetamines	4 (0.9%)	0

Note: In several cases the deceased was prescribed more than one psychoactive drug, hence the numbers in Table 3 exceed the total number of cases and percentages.

XI. Associated Risks

1. Prescribed Psychoactive Drugs

Of the 417 cases prescribed psychoactive medication prior to their deaths, 60% had those drugs implicated in their deaths (Table 7).

1.1 Methadone

Methadone, alone and in combination with other drugs was implicated in 82 cases. Of these, 36.6% were receiving prescribed methadone prior to their death compared to 63.4% who obtained it illicitly (Percentage ratio =0.6, 95%CI =0.4-0.8)

Methadone alone was implicated in 37 cases. Of these, 45.9% were receiving prescribed methadone,

compared to 54.1% who obtained the drug from illicit sources (Percentage ratio =0.8, 95%CI =0.5-1.4).

This suggests that methadone-related death was less likely to occur in those prescribed than in those who obtained the drug from illicit sources.

1.2 Antidepressants

Antidepressants, alone and in combination with other drugs, were implicated in 128 cases. Of these, 75.8% were receiving prescribed antidepressants at the time of their death, compared to 24.2% who had used drugs prescribed for others (Percentage ratio = 3.1, 95%CI =2.3-4.3)

Antidepressants alone were implicated in 85 cases. Of these, 74.1% were receiving prescribed medication, compared to 25.9% who had used drugs prescribed for others (Percentage ratio = 2.9, 95%CI = 2.0-4.2).

Those receiving prescribed antidepressants were significantly more likely to have that class of drug implicated in their death, either in combination or as the sole drug, compared to those who had used drugs prescribed to others.

1.3 Other opiate/opioid analgesics

Other opiate/opioid analgesics (e.g. dihydrocodeine, dextropropoxyphene) alone and in combination with other drugs, were implicated in 121 cases. Of these, 43.8% were receiving prescribed opiate/opioid analgesics prior to their death, compared to 56.2% who obtained the drug by other means (Percentage ratio = 0.8, 95%CI=0.6-1.0).

Other opiate/opioid analgesics alone were implicated in 47 cases. Of these, the drugs were prescribed in 48.9% of cases and obtained by other means in 51.1% of cases (Percentage ratio = 0.9, 95%CI = 0.6-1.3).

1.4 Hypnotics/sedatives

Hypnotic/sedatives, alone and in combination with other drugs, were implicated in 81 cases. Of these, 58% were receiving a prescription for this class of drug, compared to 42% who obtained them illicitly (Percentage ratio = 1.4, 95%CI = 1.0-1.9).

Fourteen cases had hypnotic/sedatives alone implicated in their death, 11 of whom received the drug via prescription.

2. Sex and accidental/intentional death

Approximately 78.5% of male cases died of accidental poisoning, compared to 63.4% of female cases (Percentage ratio = 1.2, 95%CI = 1.1-1.4). This suggests that male cases are more likely to die as a result of an accident than female cases.

Conversely, 32% of females died as a result of intentional self poisoning, compared to 17% of male cases (Percentage ratio= 1.9, 95%CI = 1.4-2.4).

This suggests that females are more likely to die of intentional self poisoning than male cases.

3. Age and accidental/intentional death

Approximately 80% of cases aged 44 years and under died as a result of accidental poisoning, compared to 55.8% of those aged 45 years and over (Percentage ratio = 1.4, 95%CI = 1.3-1.6).

Conversely, 38.3% of cases aged 45 years and over died as a result of intentional self poisoning, compared to 15.7% of cases under 44 years of age (Percentage ratio = 2.4, 95%CI = 1.9-3.2).

4. Age and Drug Implicated in Death

Table 8 shows the age distribution of deaths in terms of drug category (alone or in combination) most frequently implicated.

5. Gender and Drug Implicated in Death

Male: Heroin/morphine, alone or in combination with other drugs, was implicated in 34% of male cases; alcohol, in combination with other drugs, in 22.2%; methadone, alone or in combination with other drugs, in 13%; other opiate/opioid analgesics, alone or in combination with other drugs, in 12.5% and antidepressants, alone or in combination with other drugs, in 12.1%;

Female: Antidepressants, alone or in combination with other drugs, were implicated in 28.7% of all female cases; other opiate/opioid analgesics, alone or in combination with other drugs, in 24.5%; alcohol, in combination with other drugs, in 14.8%; hypnotic/sedatives, alone or in combination with other drugs, in 11.6% and heroin/morphine, alone or in combination with other drugs, in 11.6%.

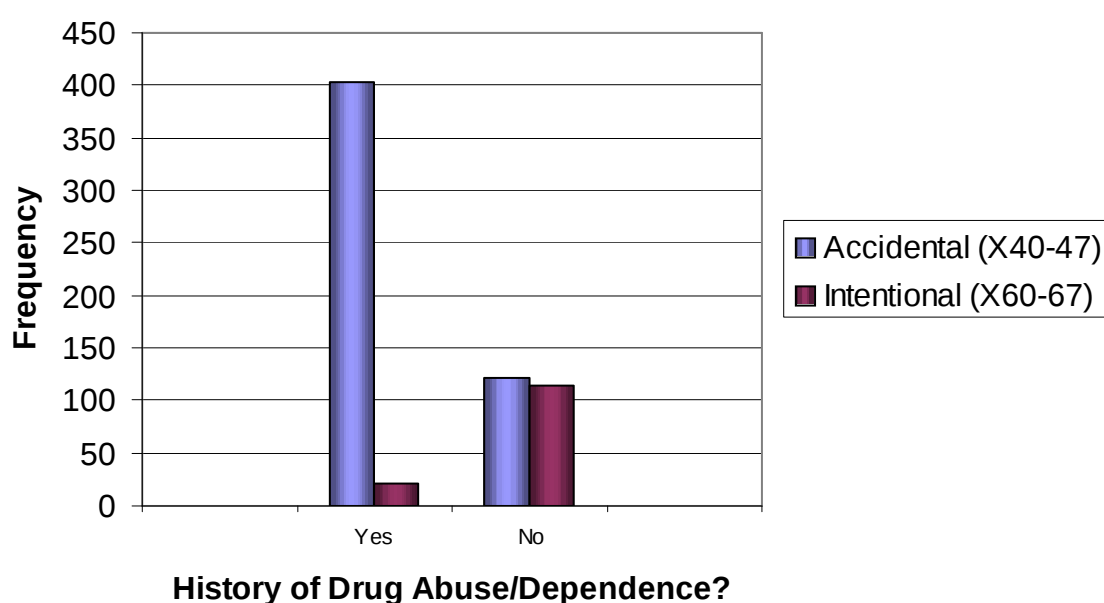
XII. Drug Abuse/Dependence

Cases with a history of drug abuse/dependence (n=443) were compared to those without such a history (n=246) on the following variables: demography, location of death, and underlying cause of death (Figure 5).

Seventy-one cases were reported as “not known” with respect to history of drug abuse/dependence. They were excluded from further analysis.

Table 8 Age and Drug Implicated in Death, July – December 1999

Age Group	n	Drug Category (alone or in combination) most frequently implicated with age group
Under 14 yrs	3	Other opiate/opioid analgesics (2/3)
15-24 yrs	123	Heroin/morphine (46.3%)
25-34 yrs	262	Heroin/morphine (35.5%)
35-44 yrs	184	Alcohol in combination with other substances (34.2%)
45-54 yrs	95	Antidepressants (29.5%)
55-64 yrs	32	Other opiate/opioid analgesics (21.9%)
Over 65 yrs	61	Other opiate/opioid analgesics (29.5%)

Fig. 5. Accidental/Intentional Death by Drug Abuse History

Demography

In comparison with non drug abusers (NDAs), drug abusers/dependents (DAs) were more likely to be male, 84% compared to 51% (Percentage ratio=1.7, 95%CI = 1.5-1.9) and twice as likely to be less than 45 years of age, 92% compared to 46.5% (Percentage ratio = 1.9, 95%CI =1.7-2.2). The median age at death for DAs was 30 years, while that for NDAs was 45 years (Mann-Whitney U=23002, p=0.0001, semi-interquartile range 8.5).

There was no significant difference between the two groups with respect to living arrangements. However DAs were more likely to be unemployed at the time of their death than NDAs (Percentage ratio = 2.1, 95%CI =1.7-2.5).

Location of Death

There was no significant difference between DAs and NDAs with respect to the location of their death. In both cases the majority died at a defined residential address (DAs, NDAs 65%).

Hospital deaths accounted for the majority of the remaining cases (DAs 25.5%, NDAs 28%).

Underlying Causes of Death

Accidental poisoning accounted for 90% of deaths in DAs, compared to 49.2% of NDA deaths (Percentage ratio = 1.9, 95%CI =1.6-2.1).

Conversely, 46.3% of NDA deaths were the result of intentional self poisoning, compared to 4.8% of DA deaths (Percentage ratio = 9.8, 95%CI =6.3-15.2).

XIII. Commentary

The demographic profile of cases remains consistent with previous reports. For the period of this report, the majority of cases were males under the age of 45 years and 58.3% of cases were drug abusers/dependents, as defined by the programme.

A stated aim of the programme is to provide early warning from surveillance of high risk populations. For the period July to December 1999, Brighton & Hove recorded the highest semi-annual death rate (12.5/100,000). This relatively high rate is consistent with previous reporting periods.

Previous reports have highlighted areas with marked changes in semi-annual death rates and noted that the validity of these changes could only be commented on through continued monitoring.

Those areas are revisited in this report as well as newly identified areas where death rates have fluctuated (Appendix 10)

Jurisdictions which stand out from this exercise are Furness and Newcastle upon Tyne, which have continued to increase since previous reporting periods. These figures represent emerging trends and require further investigation to determine a local response.

The jurisdiction of Wirral reported a notable increase in semi-annual death rate from nil reported cases in the period January–June 1999 to 11 in the period Jul-Dec 1999 (4.2/100,000). However, it should be noted that as no previous data for this jurisdiction is available before 1999, such a change may be an artefact of other factors which affect the way in which inquests are processed, e.g. prolonged investigations, increased workload. Conversely, Manchester Central reported a marked decline in their semi-annual death rate from 24 reported cases in the period January-June 1999 (7.3/100,000) to nil reported cases during July–December 1999. The validity of these changes will be verified in the next report.

Further analyses revealed significant increases in the semi-annual death rate between January-June and July–December 1999 for the following areas: Reading; Mid Kent & Medway; Leicester & South; East Somerset; West Suffolk and Birmingham & Solihull (Appendix 10).

Additional areas of concern where there are increased rates of reporting, even if not statistically significant, are: East Berkshire; North Eastern Cumbria; Western Cumbria; Torbay & South Devon; Herefordshire; Hertford; Liverpool; West Somerset; Gateshead & South Tyneside; Sunderland; Ceredigion and Pembrokeshire.

The jurisdictions of Cheltenham and Norwich recorded a significant decrease in semi-annual death rates between January-June and July-December 1999. A decline in death rates was also observed in West Cornwall and Nottingham. In addition, Lincoln continues to record a decrease in its semi-annual death rate after its peak in the third report² (11.7/100,000), reducing to 3.9/100,000 for the period of the current report.

The following jurisdictions have maintained their relatively high semi-annual death rate, suggesting that this may be a stable change rather than an artefact of data collection: Manchester North; Hitchin; North Lancs; Preston & South West Lancs; South Yorkshire East and West Yorkshire East. Conversely, the jurisdictions of Kings Lynn and Blackpool & Fylde have reported a consistent reduction in semi-annual death rate over reporting periods.

Finally, rates for Hartlepool (2.8/100,000) have increased to the level of the third report² after their dip in the fourth report³ (Appendix 10).

The first Gamma-hydroxybutyrate (GHB) related death was reported in the first six months of the year (Jan – Jun 1999) and a further two deaths were reported in this surveillance period (Jul–Dec 1999). Of the three deaths, two were females and they were all in combination with alcohol. GHB has been associated with rohypnol and its use as a “date rape drug”⁴; as it is colourless and almost odourless it is being added to victims’ drinks. This is a worrying trend given that all the literature and our own experience shows us that GHB-related fatality occurred in conjunction with alcohol.

- 1 World Health Organisation (1992) The ICD-10 Classification of Mental and Behavioural Disorders. Clinical Descriptions and Diagnostic Guidelines WHO, Geneva.
- 2 Ghodse AH, Clancy C, Oyefeso A, Pollard M, Corkery J, Lind J. (1999) Drug-related deaths as reported by coroners in England and Wales July – December 1998, np-SAD report no.3, St George’s Hospital Medical School, London.
- 3 Ghodse AH, Oyefeso A, Lind J, Pollard M, Hunt, M, Corkery J (1999) Drug-related deaths as reported by coroners in England and Wales January – June 1999, npSAD report no.4, St George’s Hospital Medical School, London.
- 4 Li J, Stokes S, Woeckener A (1998) A tale of novel intoxication: a review of the effects of gamma-hydroxybutyric acid with recommendations for management. Annals of Emergency Medicine 31 (6), 729-736.

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Appendix 1 Underlying Causes of Death January – December 1999

ICD-10	No. of cases (n=1413)	%	Description
R99	18	1.3	Unascertained
X40	20	1.4	Accidental poisoning by & exposure to non-opioid analgesics, antipyretics and antirheumatics
X41	201	14.2	Accidental poisoning by & exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X42	773	54.7	Accidental poisoning by & exposure to narcotics and psychodyletics (hallucinogens), not elsewhere classified
X43	1	0.07	Accidental poisoning by & exposure to other drugs acting on the autonomic nervous system
X44	73	5.1	Accidental poisoning by & exposure to other and unspecified drugs, medicaments and biological substances
X45	12	0.8	Accidental poisoning by & exposure to alcohol
X47	1	0.07	Accidental poisoning by & exposure to gases and vapours
X60	17	1.2	Intentional self -poisoning by & exposure to non-opioid analgesics, antipyretics and antirheumatics
X61	126	8.9	Intentional self -poisoning by & exposure to antiepileptic sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X62	102	7.2	Intentional self -poisoning by & exposure to narcotics and psychodyletics (hallucinogens), not elsewhere classified
X63	7	0.5	Intentional self -poisoning by & exposure to other drugs acting on the autonomic nervous system
X64	19	1.3	Intentional self -poisoning by & exposure to other and unspecified drugs, medicaments and biological substances
X67	4	0.3	Intentional self-poisoning by exposure to gases and vapours
X70	9	0.6	Intentional hanging
X71	1	0.07	Intentional drowning

Appendix 1 Underlying Causes of Death January – December 1999

ICD 10	No. of cases (n=1413)	%	Description
T71	6	0.4	Asphyxiation
W71	2	0.1	Accidental drowning
T07, S09..9	6	0.4	Multiple injury, head injuries
J18, J18.1,J18.9	3	0.2	Bronchopneumonia, lobar pneumonia, pneumonia
OTHER	12	0.8	Other Natural Causes

Appendix 2 Drug-related Deaths by Coroner's District of Jurisdiction. **January-December 1999** No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases Jan-Dec 1999	Annual death rate per 100,000 population	np-SAD cases 1997/8 (reported in 1999)
AVON	35	4.4	10
BEDFORDSHIRE			
Bedfordshire & Luton	22	5.1	7
BERKSHIRE			
East Berkshire	9	2.3	2
Reading	10	8.8	2
BUCKINGHAMSHIRE (excl. Milton Keynes)	12	3.2	7
Milton Keynes	3	2.0	
CAMBRIDGESHIRE³			
Huntingdon	4	3.3	
Peterborough	5	4.1	4
South & West Cambridgeshire	2	0.8	2
CHESHIRE	15	1.8	
CORNWALL			
East Cornwall	4	2.0	3
West Cornwall	14	7.4	1
CUMBRIA			
Furness	8	14.1	3
North Eastern Cumbria	6	4.9	2
Southern Cumbria	2	2.4	
Western Cumbria	5	3.8	1
DERBYSHIRE			
Derby & South Derbyshire	15	3.3	
Hundred of Scarsdale High Peak	14	6.4	5
DEVON²			
Exeter & Greater Devon	26	6.6	3

Appendix 2 Drug-related Deaths by Coroner's District of Jurisdiction. **January-December 1999** No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases Jan-Dec 1999	Annual death rate per 100,000 population	np-SAD cases 1997/8 (reported in 1999)
Plymouth & SW Devon			4
Torbay & S Devon	5	2.5	1
DORSET			
Bournemouth, Poole & E Dorset	19	4.9	4
ESSEX			
Essex & Thurrock (No 1)	39	3.9	4
GLOUCESTERSHIRE			
Cheltenham	9	3.8	11
GREATER LONDON			
Eastern London	10	1.2	3
Inner North London	62	10.6	36
Inner South London	13	1.8	
Inner West London	32	4.7	12
Northern London	40	4.0	10
Southern London	3	0.4	
GREATER MANCHESTER			
Manchester Central	7	2.1	21
North Manchester	29	6.1	13
South Manchester	30	5.2	13
West Manchester	20	3.1	29
HAMPSHIRE			
Central Hants	9	3.5	4
Portsmouth & S E Hants	31	6.5	7
Southampton & New Forest	19	6.1	
HARTLEPOOL	2	2.8	1
HEREFORDSHIRE	4	2.1	
HERTFORDSHIRE			
Hertford	5	2.1	

Appendix 2 Drug-related Deaths by Coroner's District of Jurisdiction. **January-December 1999** No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases Jan-Dec 1999	Annual death rate per 100,000 population	np-SAD cases 1997/8 (reported in 1999)
Hitchin	15	10.0	4
West Herts	17	3.9	5
ISLE OF WIGHT	3	2.9	5
KENT			
Asford & Shepway	10	6.4	1
East Kent	3	1.5	1
Mid Kent & Medway	20	4.2	1
LANCASHIRE			
Blackburn, Hyndburn & Ribble Valley	13	6.2	4
Blackpool & the Fylde	35	18.7	3
North Lancs	15	7.7	7
Preston & S W Lancs	25	6.9	5
LEICESTERSHIRE			
Leicester City & S Leics	19	4.8	1
LINCOLNSHIRE			
Boston & Spalding	4	3.9	
Lincoln	9	7.0	3
North Lincs & Grimsby			13
Sleaford	1	1.4	
MERSEYSIDE			
Knowsley, St Helens & Sefton	14	2.8	15
Liverpool	37	10.1	25
Wirral	8	3.1	2
NORFOLK			
Dereham	1	0.6	
Kings Lynn	2	1.9	
Norwich	17	16.6	7

Appendix 2 Drug-related Deaths by Coroner's District of Jurisdiction. **January-December 1999** No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases Jan-Dec 1999	Annual death rate per 100,000 population	np-SAD cases 1997/8 (reported in 1999)
NORTHAMPTONSHIRE	27	5.7	1
NORTHHUMBERLAND			
North Northumberland	5	5.7	3
South Northumberland	2	1.2	
NOTTINGHAMSHIRE	17	2.1	6
SHROPSHIRE			
Mid & North Shropshire			2
Telford & Wrekin	4	2.6	2
SOMERSET			
Eastern Somerset	10	5.1	
Western Somerset	7	3.2	1
STAFFORDSHIRE			
South Staffs	5	1.1	
Stoke on Trent & N Staffs	23	6.1	6
SUFFOLK			
Lowestoft	2	1.3	
West Suffolk	15	7.9	
SURREY	27	3.2	5
SUSSEX			
Brighton & Hove	50	24.1	8
East Sussex	21	5.3	4
West Sussex	36	6.0	4
TEESSIDE	5	1.4	7
TYNE & WEAR			
Gateshead & South Tyneside	7	2.4	2
Newcastle-upon-Tyne	17	7.1	7
North Tyneside	1	0.6	

Appendix 2 Drug-related Deaths by Coroner's District of Jurisdiction. **January-December 1999** No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases Jan-Dec 1999	Annual death rate per 100,000 population	np-SAD cases 1997/8 (reported in 1999)
Sunderland	5	2.2	
WARWICKSHIRE	1	0.2	
WEST MIDLANDS			
Birmingham & Solihull	24	2.5	10
Dudley	7	2.8	7
Wolverhampton	11	5.8	3
WILTSHIRE & SWINDON	11	2.3	3
WORCESTERSHIRE	16	4.1	7
YORKSHIRE			
East Riding & Hull	19	4.1	15
North Yorkshire East	9	4.6	
South Yorkshire East	17	3.9	3
South Yorkshire West	40	6.6	9
West Yorkshire Eastern	58	6.6	17
West Yorkshire Western	29	3.3	14
York	5	3.5	2
WALES			
Carmarthenshire	2	1.5	2
Ceredigion	2	3.5	
Neath & Port Talbot	3	2.7	2
Pembrokeshire	5	5.5	
Powys	1	1	
Swansea			1

Notes:

3. Huntingdon, Cambridge City & South and Northern Cambs ceased in March 1999 to be replaced by South & West Cambs and North & East Cambs.

2. Exeter & East Devon and North & West Devon were replaced by Exeter & Greater Devon in December 1999.

APPENDIX 3

np-SAD cases in 1997/8, reported in 1999

A further 480 inquest reports were received in 1999 on deaths occurring in 1997 and 1998.

The profile of these cases was consistent with 1999 cases in every aspect. Demographic details and a summary of principal drugs implicated in death are presented below.

Distribution of deaths according to coroners' jurisdiction is summarised in Appendix 2.

Profile of Cases

1. Demography

The majority of cases were male (75%). The median age at death was 34 years, with 79% being under the age of 45 years. Approximately 57% of cases were unemployed and 36% of cases were living alone at the time of their death (Table1).

2. Location of Death

The majority of cases (70%) died at a defined residential address (e.g. the deceased's home address or other private residential address), 27% died in hospital and 6% died elsewhere (e.g. in a public place).

3. Underlying Causes of Death

The proportions of ICD-10 categories of underlying cause of death were as follows:

- ◆ Accidental poisoning (X40-47) 77.5%
- ◆ Intentional self-poisoning (X60-67) 16.8%
- ◆ Other (e.g. natural causes, hanging, unascertained) 5.6%

Table 1 Demographic Variables

		% np-SAD cases 1997/8 (reported in 1999)
Gender	Male	75.0
	Female	25.0
Employed Status	Unemployed	56.9
	Employed	27.9
	Childcare/housewife	0.8
	Student	0.2
	Retired/sickness/invalidity	11.5
	Other	0.2
	Not known	2.5
Living Arrangements	Alone	35.6
	With others	45.2
	No fixed abode	2.9
	Not known	16.2

4. Substances Implicated in Death

Drugs implicated in death were not specified in 33 cases. Of the remaining cases (n=447), the principle substances implicated were heroin/morphine (33.3%) and alcohol in combination with other drugs (25.3%). Heroin/morphine as sole implicated drug accounted for 16.8% of deaths and antidepressants for 8.3% of deaths. The breakdown of psychoactive substances implicated in death is presented in Table 2.

Table 2 Psychoactive substances implicated in death 1997/8 cases

Drug Category	No of cases where no other substance implicated (n=447) 1997/8 cases	Total number of cases where drug implicated (n=447) 1997/8 cases
Hypnotic/sedatives	6 (1.3%)	49 (11%)
Anti-depressants	37 (8.3%)	67 (15.0%)
Other opiate/opioid analgesics	36 (8%)	84 (18.8%)
methadone	33 (7.4%)	77 (17.2%)
Antipsychotics	8 (1.8%)	17 (3.8%)
Heroin/morphine	75 (16.8%)	149 (33.3%)
amphetamines	4 (0.9%)	11 (2.5%)
cocaine	2 (0.4%)	11 (2.5%)
alcohol		113 (25.3%)
mdma	1 (0.2%)	2 (0.4%)
ghb	3 (0.7%)	3 (0.7%)

Note: The total frequency in the third column exceeds 447 cases because many cases have more than one drug implicated in their death. Psychoactive substance-related deaths (see definition on p.12) excludes deaths caused by other drugs alone, e.g. non-opioid analgesics, such as paracetamol. Alcohol is only included in combination with other substances.

APPENDIX 4 Substances implicated in death – a comparison of np-SAD and DAWN data

Drug Category	np-SAD January – December 1999 (n= 1340) (%)	DAWN Jan – December 1998 (n=10123) (%)	Percentage Ratio
Heroin/morphine	436 (32.5)	4330(42.77)	0.76*
Antidepressants	274 (20.45)	1541(15.22)	1.34*
Opiate/opioid analgesics	228 (17)	2369(23.40)	0.73*
Methadone	147 (11)	560(5.53)	1.98*
Hypnotics/sedatives	151 (11.2)	404(3.99)	2.82*
Anti-psychotics	31 (2..3)	65(0.64)	3.60*
Amphetamines	38 (2.8)	383(3.78)	0.75
Cocaine	51 (3.8)	4587(45.31)	0.08*
Alcohol in combination with other substances	272 (20.3)	3723(36.78)	0.55*
MDMA	17 (1.3)		
Cannabis	3 (0.2)		

Note: * significant difference (p=0.05, 2 tailed test)

APPENDIX 5 Description of the np-SAD Programme

Programme Staff

Professor Hamid Ghodse, Chairman of Dept.

Dr Adenekan Oyefeso, Senior Lecturer

Ms Jackie Lind, Ms Mary Hunt, Programme Managers

Mr Michael Pollard, Database Officer

Mr Rajnikant Mehta, Statistician

Mr John Corkery, Honorary Research Fellow

Administration

The national programme on substance abuse deaths (np-SAD) is managed within the overall structure of the Centre for Addiction Studies Unit within the Department of Addictive Behaviour & Psychological Medicine, St. George's Hospital Medical School, London.

np-SAD Databases

The np-SAD manages two principal databases - the Dead Addicts' Database and the Coroners' Drug-Related Deaths Database.

The Dead Addicts' Database was established in 1978 and contains data on characteristics of dead, previously notified addicts since 1967. It is updated via information collected from the Home Office and other sources and cross-checked with the Home Office Addicts' Index. In May 1997, the Addicts' Index was closed. In recognition of the rich research resource this database provided, the electronic database of the Index was transferred to the Department of Addictive Behaviour, which has taken formal custody of the data for research purposes.

The Coroners' Drug-Related Deaths Database was established in conjunction with the Home Office following the closure of the Addicts' Index. The purpose of the database is to provide information for the management of a national surveillance system for the monitoring of drug-related deaths reported by coroners and

procurators fiscal. Data is sent to the np-SAD on a standard reporting form (see Appendix 7).

Data Management

1. Data Collection

All coroners and procurators fiscal in the United Kingdom are issued with copies of the standard form (Appendix 7). They are invited to complete the forms on all deaths which meet the criteria, as described in the report, and return them to the np-SAD office at St. George's Hospital Medical School for coding and entry onto the database.

2. Data Entry & Coding

A great deal of consideration was given to the area of data coding to ensure that comparison with other databases was possible and that the final analyses would be useful to readers.

For example, all cases were coded for Health Authority of residence of the deceased. Causes of death (immediate and underlying) were re-coded according to ICD-10. All drugs (i.e. prescribed, found at post-mortem and reported as implicated in the death) were coded separately according to therapeutic drug category (i.e. hypnotics/sedatives, antidepressants, opiates, etc.).

3. Database

The data-set is held on a Microsoft ACCESS database. Anonymised data is then extracted onto SPSS for analysis. All data held, whether electronic or paper, is stored securely and treated as confidential. Access is restricted to programme staff. Only aggregated and anonymised data is released to third parties.

APPENDIX 6 Reporting Form

NOTIFICATION OF DRUG RELATED DEATH

Section I Demographic Information

Deceased Forename: _____ Family Name: _____ Sex ☐ Male ☐ Female
 Known Aliases: _____
 Date of Birth: _____ / _____ / _____ Place of Birth: _____
 Usual Address: _____
 _____ Postcode _____

Ethnicity (tick one)

- ☐ White ☐ Pakistani ☐ Black African ☐ Other, specify _____
☐ Chinese ☐ Bangladeshi ☐ Black Caribbean ☐ Not Known
☐ Indian ☐ Black other, specify: _____

Occupational Status (tick one)

- ☐ Employed (manual) ☐ Unemployed ☐ Retired ☐ Not known
☐ Employed (non-manual) ☐ Childcare/ Houseperson ☐ Student/pupil
☐ Self employed ☐ Invalidity/sickness ☐ Other specify : _____

Living Arrangements (Tick one)

- ☐ Alone ☐ Self & children ☐ No fixed abode
☐ With Partner ☐ With parents ☐ Not known
☐ Partner & children ☐ With friends ☐ Other sepecify: _____

Section II Circumstances of Death

Date of death: _____ / _____ / _____ Place of death: _____

Was the deceased on prescribed medication? ☐ Yes ☐ No ☐ Not known

If yes, please list drugs: 1. _____ 2. _____
 3. _____ 4. _____ 5. _____

Was the deceased a drug addict or known drug abuser? ☐ Yes ☐ no ☐ not known

Please list drugs present at *post mortem* (including alcohol) which were implicated in the death:

1. _____ 2. _____
 3. _____ 4. _____ 5. _____

Please turn over

APPENDIX 6**Reporting Form (cont'd)****Section III Causes of Death**

- 1 (a). _____
 1 (b) _____
 2. _____

Coroner's verdict (if verdict is accident or misadventure, please also complete section IV)

Section IV Accidental Deaths and Misadventure

Place where accident occurred (tick one only)

- | | | |
|---|--|---|
| ☐ Home | ☐ Mine or quarry | ☐ Residential institution |
| ☐ Farm | ☐ Street or highway | ☐ Place of recreation or sport |
| ☐ Industrial place | ☐ Educational institution | ☐ Other specified place _____ |

Details of accident: _____

Section V Any other relevant information**Section VI: Coroner's Details**

Coroner's Name: _____ **Date of inquest** ____/____/____
Jurisdiction: _____ **Office:** _____
Signature: _____ **Date:** ____/____/____

Please send completed form to :

np-SAD, Dept. of Addictive Behaviour
St. George's Hospital Medical School,
Cranmer Terrace, London SW17 0RE
 For general enquiries tel: 0181 725 2585/5352 or fax 0181 725 2914

APPENDIX 7 Reporting Jurisdictions

Jurisdiction	Area Covered
Ashford & Shepway (Kent)	The districts of Ashford & Shepway
Avon	The city of Bristol and the districts of Bath & North East Somerset, North West Somerset and
Bedfordshire & Luton	The whole county of Bedfordshire and the county of Luton
Birmingham & Solihull	The districts of Birmingham and Solihull.
Blackburn, Hyndburn & Ribble Valley	The districts of Blackburn, Hyndburn and Ribble Valley
Blackpool & Fylde	The districts of Blackpool and Fylde.
Boston & Spalding (Lincs)	The districts of Boston and South Holland
Bournemouth, Poole & Eastern Dorset	The counties of Bournemouth and Poole, and the districts of Christchurch, Purbeck and Wimbourne.
Brighton & Hove	The county of Brighton and Hove.
Buckinghamshire	The whole county of Buckinghamshire (excl. Milton Keynes)
Cardiff & the Vale of Glamorgan	The county of Cardiff and the county borough of the Vale of Glamorgan
Carmarthenshire	The districts of Carmarthen, Llanelli and Dinefwr
Ceredigion	The district of Ceredigion.
Cheltenham (Glos)	The district of Cheltenham; The districts of Cotswold, Stroud and Tewkesbury except the parishes in the Gloucester coroner's district.
Cheshire	The whole county of Cheshire
City of London	The city of London
Derby & South Derbyshire	The county of Derby and the districts of Erewash and South Derbyshire. The district of Amber Valley, except the parts in the Coroners' Jurisdictions of High Peak and the Hundred of Scarsdale. In the district of West Derbyshire, the parishes of Alkmonton, Ashbourne, Atlow, Biggin, Boylestone, Bradbourne, Bradley, Brailsford, Clifton and Compton, Cubley, Doveridge, Edlaston and Wyaston, Fenny Bentley, Hognaston, Hollington, Hulland, Hulland Ward, Hungry Bentley, Kirk Ireton, Kniveton, Lea Hall, Longford, Mapleton, Marston Montgomery, Mercaston, Norbury and Roston, Offcote and Underwood, Osmaston, Rodsley, Shirley, Snelston, Somersal Herbert, Sudbury, Thorpe, Tissington, Yeaveley and Yeldersley.

APPENDIX 7 Reporting Jurisdictions

Dereham (Norfolk)	The district of Breckland, except the parishes in the Diss coroners district; In the district of North Norfolk, the parishes of Barsham, Binham, Blakeney, Briningham, Brinton, Briston, Cley-next-the-Sea, Dunton, Fakenham, Field Dalling, Fulmodeston, Great Ryburgh, Great Snoring, Great Walsingham, Gunthorpe, Helhoughton, Hempton, Hindolveston, Hindringham, Holkham, Holt, Kettlestone, Langham, Letheringsett with Glandford, Little Ryburgh, Little Snoring, Little Walsingham, Melton Constable, Morston, Pudding Norton, Raynham, Salthouse, Sculthorpe, Stibbard, Stiffkey, Stody, Swanton Novers, Tattersett, Thornage, Thurning, Thursford, Warham, Wells-next-the-Sea, Wighton, Wiveton and Wood Norton. In the district of Broadland, the parishes of Alderford, Booton, Brandiston, Foulsham, Great Witchingham, Guestwick, Haveringham, Little Witchingham, Morton-on-the-Hill, Reepham, Sall, Swannington, Themelthorpe, Weston Longville and Wood Dalling. In the district of South Norfolk, the parishes of Barnham Broom, Deopham, Hingham, Kimberley, Morley, Runhall and Wicklewood.
Diss	In the district of Breckland (except that contained in the Coroner's Jurisdiction of Dereham) the parishes of Attleborough Banham, Besthorpe, Blo' Norton, Brettenham, Brudgham, Cranwich, Croxton, Didlington, Garboldisham, Great Ellingham, Harling, Hockham, Ickburgh, Kenninghall, Kilverstone, Lynford, Mundford, New Buckenham, North Lopham, Old Buckenham, Quidenham, Riddlesworth, Rocklands, Roudham, Shropham, Snetterton, South Lopham, Stanford, Sturston, Thetford, Weeting-with-Broomhill and Wretham. In the district of South Norfolk (except that contained in the Coroners' Jurisdictions of Dereham and Norwich) the parishes of Alburgh, Aslacton, Bressingham, Brockdish, Bunwell, Burston, Carleton Rode, Denton, Dickleburgh, Diss, Earsham, Flordon, Fornsett, Gissing, Hempsall, Long Stratton, Morningthorpe, Moulton St Michael, Mulbarton, Needham, Newton Flotman, Pulham Market, Pulham St Mary, Redenhall with Harleston, Royden, Saxlingham Nethergate, Tasburgh, Tharston, Tibenham, Tivetshall St Maragret, Tivetshall St Mary, Wacton, Winfarting and Wortwell.
Dudley (West Midlands)	The district of Dudley
East Berkshire	The borough of Slough, the Royal borough of Windsor and Maidenhead, and the districts of Bracknell and Wokingham
East Cornwall	The districts of Restormel, North Cornwall and Caradon
Eastern London	The London boroughs of Barking, Havering, Newham, Redbridge and Waltham Forest
East Kent	The districts of Canterbury and Dover. In the district of Swale, Faversham and the parishes of Teynham, Lynsted, Doddington, Newham, Norton and Buckland, Stone, Luddenham, Oare, Ospringle, Eastling, Stalisfield, Throwley, Shelwich Baldlesmere and Leaveland, Selling, Boughton under Blean, Graveney with Goodnestone, Hemhill, Dunkirk.
East Riding & Hull	The counties of the East Riding of Yorkshire and the city of Kingston upon Hull.
East Somerset	The districts of Mendip and South Somerset
East Sussex	The whole county.

APPENDIX 7 Reporting Jurisdictions

Essex & Thurrock	The districts of Basildon, Braintree, Brentwood, Chelmsford, Colchester, Epping Forest, Harlow, Maldon, Tendring, Thurrock and Uttlesford.
Exeter & Greater Devon	The district of East Devon and Exeter. The district of Mid Devon except the parishes in the North and West Devon coroner's district; That part of the district of Teignbridge comprising the parishes of Alphington, Ashton, Bovey Tracey, Bridford, Christow, Chudleigh, Doddiscombsleigh, Dunchideock, Dunsford, Exminster, Hennock, Holcombe Burnell, Ide, Kenn, Lustleigh, Manaton, Moretonhampstead, North Bovey, Shillingford St George, Tedburn St Mary, Trusham and Whitestone. The districts of North Devon, Torridge and West Devon. That part of the Mid Devon district comprising the parishes of Bow, Brushford, Chawleigh, Clannaborough, Coldridge, Eggesford, Hittishleigh, Thelbridge, Wembwothy and Zeal Monachorum.
Furness (Cumbria)	The district of Barrow-in-Furness. In the district of South Lakeland: the parishes of Aldingham, Angerton, Blawith and Subberthwaite, Broughton East, Broughton West, Cartmell Fell, Claife, Colton, Coniston, Dunnerdale-with-Seathwaite, Egton-with-Newland, Grange, Haverthwaite, Hawkshead, Kirby Ireleth, Lower Allithwaite, Lower Holker, Lowick, Mansriggs and Osmotherley, Pennington, Satterthwaite, Skelwith, Staveley, Torver, Ulverston, Upper Allithwaite and Urswick. Lands common to the parishes of Lowick and Subberthwaite Civil; Land common to the parishes of Aldingham and Urswick Civil and known as Birkrigg Common.
Gateshead & South Tyneside	The districts of Gateshead and South Tyneside.
Grantham (Lincs)	The district of South Kesteven except the parishes in the Stamford coroner's district.
Hampshire Central	The districts of Winchester, Test Valley and Eastleigh.
Hartlepool	The County of Hartlepool.
Herefordshire	The city of Hereford, the districts of South Herefordshire and Leominster. In the district of Malvern Hills, the parishes of Acton Beauchamp, Ashperton, Avenbury, Aylton, Bishops Frome, Bosbury, Bredenbury, Brockhampton, Bromyard & Winslow, Canon Frome, Castle Frome, Coddington, Collington, Colwall, Cradley, Donnington, Eastnor, Edwin Loach & Saltmarsh, Edwyn Ralph, Eggington, Evesbatch, Felton, Grendon Bishop, Hampson Charles, Ledbury Rural, Linton, Little Cowarne, Little Marcle, Mathon, Moreton Jeffries, Much Cowarne, Much Marcle, Munsley, Norton, Ocle Pychard, Pencombe with Grendon Warren, Pixley, Putley, Stanford Bishop, Stoke Lacv, Stretton Grandison, Tarrington, Tedstone Delamere, Tedstone Wafer, Thornbury, Ullingswick, Upper Sapey, Wacton, Wellington Heath, West Malvern, Whitbourne, Wolferlow, Woolhope and Yarkhill

APPENDIX 7

Reporting Jurisdictions

Hertford	The district of Broxbourne; The district of East Hertfordshire except the parishes in the Hitchin Coroner's district. In the district of North Hertfordshire, the parish of Rushden. In the district of Welwyn Hatfield, the parishes of Essendon and Hatfield.
High Peak (Derbys)	The district of High Peak. The district of West Derbyshire (Derbyshire Dales) except the parishes in the jurisdiction of South Derbyshire. In the district of Amber Valley, the parishes of Dethick, Lea and Holloway.
Hitchin (Herts)	The district of Stevenage; The district of North Hertfordshire except the parish of Rushden; The district of Welwyn Hatfield except the parishes in the Hertford and Watford/St Albans Coroner's districts; In the district of East Hertfordshire the parishes of Aston, Benington, Datchworth, Great Munden, Little Munden, Sacombe, Walkern and Watton-at-Stone.
(The) Hundred of Scarsdale	The districts of Bolsover, Chesterfield and North East Derbyshire; In the district of Amber Valley, the parish of South Wingfield and wards nos. 1 - 4.
Inner North London	London Boroughs of Camden, Hackney, Islington and Tower Hamlets.
Inner South London	London boroughs of Greenwich, Lambeth, Lewisham and Southwark.
Inner West London	London Boroughs of Wandsworth and Merton, the Royal Borough of Kensington and Chelsea, and the City of Westminster.
Isle of Wight	Isle of Wight.
Isles of Scilly	Isles of Scilly
Kings Lynn	The district of Kings Lynn and West Norfolk
Knowsley, St. Helens & Sefton (Merseyside)	The districts of Knowsley, St Helens and Sefton.

APPENDIX 7

Reporting Jurisdictions

Leicester City & South Leicestershire	The county of Leicester and the districts of Blaby, Harborough, Oadby, Wigston.
Lincoln	The district of Lincoln. The district of West Lindsey except the parishes in the Louth coroner's district. In the district of North Kesteven, the parishes of Aubourn Haddington and South Hykeham, Bassingham, Beckingham, Boothby Graffoe, Bracebridge Heath, Branstons and Mere, Brant Broughton and Stragglehope, Canwick, Carlton-le-Moorland, Coleby, Doddington and Whisby, Dunston, Eagle and Swinethorpe, Harmston, Heighington, Leadenham, Metheringham, Navenby, Nocton, North Hykeham, North Scarle, Norton Disney, Potter Hanworth, Skellingthorpe, Stapleford, Swinderby, Thorpe on the Hill, Thurlby, Waddington, Washingborough, Welbourn and Wellingore.
Liverpool	The district of Liverpool
Louth (Lincs)	In the district of East Lindsey, the parishes of Aby with Greenfield, Alford, Alvingham, Asterby, Authorpe, Beesby in the Marsh, Belleau, Benniworth, Bilsby, Binbrook, Brackenborough, Brinkhill, Burgh on Bain, Burwell, Calceby, Calcethorpe, Cawkwell, Claythorpe, Conisholme, Covenham St Bartholomew, Covenham St Mary, Donnington on Bain, Driby, East Barkwith, East Wykeham, Farlesthorne, Fotherby, Fulstow, Gayton le Marsh, Gayton le Wold, Goulceby, Grainsby, Grainthorpe, Great Carlton, Grimoldby, Hainton, Hallington, Hannah cum Hagnaby, Hatton, Haugh, Haugham, Holton le Clay, Huttoft, Keddington, Kelstern, Langton by Wragby, Legbourne, Little Carlton, Little Cawthorpe, Little Cawthorpe, Little Grimsby, Louth, Ludborough, Ludford, Mablethorpe and Sutton, Maidenwell, Maltby le Marsh, Manby, Markby, Market Stainton, Marsh Chapel, Muckton, North Coates, North Cockerington, North Elkington, North Ormsby, North Reston, North Somercotes, North Thoresby, Panton, Raithby cum Maltby, Ranbly, Rigsby with Ailsby, Saleby with Thoresthorne, Saltfleetby All Saints, Saltfleetby St Clement, Saltfleetby by St Peter, Scamblesby, Skidbrooke with Saltfleet Haven, Sotby, South Cockerington, South Elkington, South Ormsby cum Ketsby, South Reston, South Somercotes, South Thoresbury, South Willingham, Stenigot, Stewton, Strubby with Woodthorpe, Swaby, Tathwell, Tetney, Theddlethorpe All Saints, Theddlethorpe St Helen, Tothill, Ulceby with Fordington, Utterby, Waithe, Walmsgate, Well, Welton le Wold, West Barkwith, West Torrington, Withcall, Withern with Stain, Wragby, Wyham cum Cadeby and Yarburgh. In the district of West Lindsey, the parishes of Bigby, Brocklesbury, Cabourne, Caistor, Claxby, Grasby, Great Limber, Holton Le Moor, Keelby, Kirmond le Mire, Legsby Linwood, Market Rasen, Middle Rasen, Nettleton, Normanby le Wold, North Kelsey, North Willingham, Osgodby, Owersby, Riby, Rothwell, Searby cum Owmbly, Sixhills, Somerby, South Kelsey, Stainton le Vale, Swallow, Swinhope, Tealby, Thoresway, Thorganby and Walesby.
Lowestoft (Suffolk)	The district of Waveney; that part of the district of Mid Suffolk not contained in the West Suffolk coroner's district or the Ipswich coroner's district; and that part of the district of Suffolk Coastal not contained in the Ipswich coroner's district.

APPENDIX 7 Reporting Jurisdictions

Manchester Central	The district of Manchester.
Mid & North Shropshire	The district of Oswestry. The district of North Shropshire, except the parishes in the East Shropshire coroner's district. The district of Shrewsbury and Atcham, except the parish of Buildwas.
Mid Kent & Medway	The city of Rochester upon Medway. The districts of Maidstone and Gillingham. The district of Swale, with the exception of Faversham and the parishes in the jurisdiction of East Kent. The district of Tonbridge & Malling, with the exception of the parishes in the jurisdiction of North West Kent.
Milton Keynes	The whole county of Milton Keynes.
Neath & Port Talbot	The Districts of Neath and Port Talbot. In the Borough of Lliw Valley, the communities of Cilybebyll, Clydach, Cwmllynfell, Gwam-Cae-Gurwen, Mawr, Pontardawe and Ystalyfera.
Newcastle upon Tyne	The district of Newcastle-upon-Tyne.
Northamptonshire	The whole county of Northamptonshire.

APPENDIX 7 Reporting Jurisdictions

North & East Cambridgeshire	The districts of Fenland, Ely and East Cambridgeshire .
North East Cumbria	The district of Carlisle. The district of Eden, except the parish of Threlkeld; In the district of Allerdale, the parishes of Aikton, Allhallows, Allonby, Aspatria, Blennerhasset and Torpenhow, Bolton, Bowness, Bromfield, Caldbeck, Dundraw, Hayton and Mealo, Holme Abbey, Holme East Waver, Holme Low, Holme St Cuthbert, Ireby, Kirkhampton, Kirkbride, Sebergham, Silloth, Thursby, Waverton, Westnewton, Westward, Wigton and Woodside. Skinburness Marsh, common to the parishes of Holme Abbey, Holme Low and Holme St Cuthbert Civil.
Northern London	The London boroughs of Barnet, Brent, Enfield, Haringey & Harrow.
North Lancashire	The districts of Lancaster and Wyre.
North Lincs & Grimsby	The counties of North Lincolnshire and North East Lincolnshire.
North Manchester	The districts of Bury, Rochdale and Oldham.
North Northumberland	The districts of Alnwick and Berwick-upon-Tweed and so much of the districts of Castle Morpeth and Wansbeck as lies north of the line for the time being of the centre of the River Wansbeck.
North Tyneside	The district of North Tyneside.
North West Kent	The districts of Dartford, Gravesham, Sevenoaks and Tunbridge Wells. In the district of Tonbridge and Malling, the parishes of Addington, Aylesford, Birling, Burham, Ditton, East Malling and Larkfield, East Peckham, Leybourne, Mereworth, Offham, Ryarsh, Snodland, Trottiscliffe, Watlingbury, West Malling and Wouldham
North Yorkshire - Eastern	The districts of Hambleton, Ryedale and Scarborough
Norwich	The district of Norwich. The districts of North Norfolk and Broadland, except the parishes in the jurisdiction of Dereham. The district of South Norfolk, except the parishes in the jurisdictions of Diss and Dereham.
Nottinghamshire	The whole of Nottinghamshire.
Pembrokeshire	The district of Preseli and South Pembrokeshire, including Caldey Island and St Margaret's Island)
Peterborough (Cambs)	The district of Peterborough
Plymouth & SW Devon	The district of Plymouth; The district of South Hams except the parishes in the Torbay and South Devon coroner's district.
Portsmouth & South East Hants	The county of Portsmouth, and the districts of Fareham, Gosport and Havant and, in the district of East Hampshire, the parishes of Buriton, Clanfield, Colemore and Priors Dean, East Meon, Froxfield, Hawkley, Horndean, Langrish, Liss, Petersfield, Rowlands Castle and Steep.
Powys	The whole county of Powys.
Preston & SW Lancashire	The district of Chorley, Preston, South Ribble and West Lancashire.

APPENDIX 7 Reporting Jurisdictions

(The) Queen's Household	The Coroner of the Queen's Household has exclusive jurisdiction in respect of inquests and, semble, inquiries which do not lead to inquests, on persons whose bodies are lying within the limits of any of the Queen's palaces or within the limits of any other house where Her Majesty is then demurrant and abiding in her own royal person, notwithstanding the subsequent removal of Her Majesty from such palace or house. The limits of the palace or house are deemed to extend to any courts, gardens or other places within the curtilage of the palace or house but not further. Where a body is found lying dead beyond these limits, the coroner of the Queen's Household has no jurisdiction.
Reading (Berkshire)	The district of Reading.
Sleaford (Lincs)	The district of North Kesteven, except the parishes in the Lincoln coroner's district.
Southampton & the New Forest	The county of Southampton and the district of New Forest
Southern Cumbria	The district of South Lakeland, except the parishes in the jurisdiction of Furness.
Southern London	London boroughs of Bexley, Bromley, Croydon and Sutton.
South Northumberland	The districts of Blyth Valley and Tynedale and so much of the districts of Castle Morpeth and Wansbeck as lie south of the line for the time being of the centre of the River Wansbeck. The district of North Tyne-side.
South Shropshire	The district of South Shropshire. The district of Bridgnorth, except the parishes in the East Shropshire coroner's district.
South & West Cambridgeshire	The districts of Huntingdon, South Cambridgeshire and the City of Cambridge.
South Yorkshire - East	The district of Doncaster and Rotherham.
South Yorkshire - West	The districts of Bamsley and Sheffield.
Stamford (Lincs)	In the district of South Kesteven, the parishes of Aslackby & Laughton, Barholm & Stowe, Baston, Billingborough, Bourne, Braceborough & Wilsthorpe, Carey Aunby & Holywell, Carlby, Castle Bytham, Corby Glen, Couthorpe & Creeton, Deeping St James, Dowsby, Dunsby, Edenham, Folkingham, Greatford, Haconby, Horbling, Imham, Kirkby Underwood, Langtoft, Little Bytham, Market Deeping, Morton, Pointon & Sempringham, Rippingale, Stamford, Swayfield, Swinstead, Tallington, Thurlby, Toft with Lound & Manthorpe, Uffington, West Deeping and Witham on the Hill.
Stoke-on-Trent & North Staffordshire	The county of Stoke-on-Trent, and the districts of Newcastle-under-Lyme and Staffordshire Moorlands.
Sunderland	The district of Sunderland.
Surrey	The whole county of Surrey.
Swansea & Gower	The District of Swansea In the borough of Lliw Valley, the communities of Gorseinon, Gowerton, Grovesend, Llangyfelach, Llchwyr, Penllergaer, Pontardulais and Pont-Lliw.
Teesside	The counties of Middlesbrough, Redcar & Cleveland and Stockton-on-Tees.

APPENDIX 7 Reporting Jurisdictions

Telford & Wrekin	The unitary authority of Telford & Wrekin
Torbay & S Devon	The district of Torbay; The district of Teignbridge except the parishes in the Exeter and East Devon coroner's district; That part of the district of South Hams comprising the parishes of Ashprington, Berry Pomeroy, Blackawton, Cornworthy, Dartington, Dartmouth, Dean Prior, Dittisham, Halwell, Harberton, Holne, Kingswear, Littlehampton, Marldon, Rattery, Slapton, Staverton, Stoke Fleming, Stoke Gabriel, Strete, Totnes and West Buckfastleigh.
Warwickshire	The whole county of Warwickshire.
West Berkshire	The district of Newbury
West Cornwall	The districts of Carrick, Kerrier and Penrith.
West Cumbria	The district of Copeland; The district of Allerdale, except the parts in the North Eastern Coroner's district; In the district of Eden, the parish of Threlkeld.
West Hertfordshire	The districts of Dacorum, Hertsmere, St Albans and Watford. The district of Three Rivers, including the parish of Sarratt. In the district of Welwyn Hatfield, the parishes of Nortaw and North Mymms
West Manchester	The districts of Wigan, Bolton and Salford.
West Somerset	The districts of Sedgemoor, Taunton Deane and West Somerset.
West Suffolk	The districts of Forest Heath and St Edmundsbury. In the district of Babergh the parishes of Acton, Aldham, Alpheton, Assington, Bildeston, Boxford, Boxted, Brent Eleigh, Brettenham, Bures St Mary, Chelsworth, Chilton, Cockfield, Edwardstone, Elmsett, Glemsford, Great Cornard, Great Walldingfield, Groton, Hadleigh, Hartest, Hitcham, Kersey, Kettlebaston, Lavenham, Lawshall, Layham, Leavenheath, Lindsey, Little Cornard, Little Walldingfield, Long Melford, Milden, Monks Eleigh, Nayland with Wissington, Nedging with Naughton, Newton, Polstead, Preston, Semer, Shimpling, Somerton, Stanstead, Stoke-by-Nayland, Sudbury, Thorp Morieux, Wattisham and Whatfield. In the district of Mid Suffolk the parishes of Bacton, Badley, Badwell Ash, Barking, Battisford, Beyton, Botesdale, Buxhall, Combs, Cotton, Creeting St Mary, Creeting St Peter, Drinkstone, Earl Stonham, Elmswell, Felsham, Finningham, Gedding, Gipping, Great Ashfield, Great Bricett, Great Finborough, Harleston, Haughley, Hessel, Hinderclay, Hunston, Langham, Little Finborough, Needham Market, Norton, Old Newton, Onehouse, Rattlesden, Redgrave, Rickinghall Inferior, Rickinghall Superior, Ringshall, Shelland, Stowlangtoft, Stowmarket, Stowupland, Thurston, Tostock, Walsham-le-Willows, Wattisfield, Wetherden, Westhorpe, Woolpit and Wyverstone.
West Sussex	The whole county of West Sussex.
West Yorkshire - Eastern	The Metropolitan district of Leeds and Wakefield
West Yorkshire - Western	The Metropolitan districts of Bradford, Calverdale and Kirklees.
Wiltshire & Swindon	The counties of Wiltshire and Swindon.

APPENDIX 7**Reporting Jurisdictions**

Wirral (Merseyside)	The district of Wirral.
Wolverhampton	The district of Wolverhampton
Worcestershire	The city of Worcester and the districts of Wychavon, Bromsgrove, Redditch and Wyre Forest.
York	The County of York. In the district of Selby, the parishes of Kexby, Dunnington, Heslington, Elvington, Fulford, Wheldrake, Naburn and Deighton. In the district of Harrogate, the parishes of Nether Poppleton and Upper Poppleton. In the district of Ryedale, the parishes of Strensall, Haxby, Wigginton, Skelton, Rawcliffe, Clifton (Without), New Earswick, Earswick, Towthorpe, Huntington, Heworth (without), Osbaldwick, Murton, Stockton-on-the-Forest, Holtby.

Appendix 8 Underlying Causes of Death July – December 1999

ICD-10	No. of cases (n=760)	%	Description
R99	13	1.7	Unascertained
X40	12	1.6	Accidental poisoning by & exposure to non-opioid analgesics, antipyretics and antirheumatics
X41	120	15.8	Accidental poisoning by & exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X42	411	54	Accidental poisoning by & exposure to narcotics and psychodyletics (hallucinogens), not elsewhere classified
X43	1	0.1	Accidental poisoning by & exposure to other drugs acting on the autonomic nervous system
X44	14	1.8	Accidental poisoning by & exposure to other and unspecified drugs, medicaments and biological substances
X45	5	0.7	Accidental poisoning by & exposure to alcohol
X47	1	0.1	Accidental poisoning by & exposure to gases and vapours
X60	8	1.1	Intentional self -poisoning by & exposure to non-opioid analgesics, antipyretics and antirheumatics
X61	82	10.8	Intentional self -poisoning by & exposure to antiepileptic sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X62	58	7.6	Intentional self -poisoning by & exposure to narcotics and psychodyletics (hallucinogens), not elsewhere classified
X63	2	0.3	Intentional self -poisoning by & exposure to other drugs acting on the autonomic nervous system
X64	10	1.3	Intentional self -poisoning by & exposure to other and unspecified drugs, medicaments and biological substances
X67	2	0.3	Intentional self-poisoning by exposure to gases and vapours
X70	5	0.7	Intentional hanging
X71	1	0.1	Intentional drowning

Appendix 8 Underlying Causes of Death July – December 1999

ICD 10	No. of cases (n=760)	%	Description
T71	5	0.7	Asphyxiation
W71	1	0.1	Accidental drowning
T07, S09..9	4	0.5	Multiple injury, head injuries
OTHER	5	0.7	Other Natural Causes

Appendix 9 Drug-related Deaths by Coroner's District of Jurisdiction. July-December 1999 No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases July-Dec 1999	Semi-annual death rate per 100,000 population	Semi-annual % of inquests held
AVON	19	2.4	4.6
BEDFORDSHIRE			
Bedfordshire & Luton	11	2.6	11.2
BERKSHIRE			
East Berkshire	7	1.8	9.7
Reading	9	7.9	25
West Berkshire	0	0	0
BUCKINGHAMSHIRE (excl. Milton Keynes)	6	1.6	7.5
Milton Keynes	3	2	5.3
CAMBRIDGESHIRE			
North & East Cambridgeshire	0	0	0
Peterborough	4	3.3	12.9
South & West Cambridgeshire	1	0.4	1.2
CHESHIRE	0	0	0
CORNWALL			
East Cornwall	2	1	4
West Cornwall	4	2.1	7.4
CUMBRIA			
Furness	5	8.8	10.3
North Eastern Cumbria	6	4.9	9.8
Western Cumbria	4	3	12.3
DERBYSHIRE			
Derby & South Derbyshire	9	2.0	7.9
High Peak	0	0	0
Hundred of Scarsdale	9	4.1	6.4
DEVON			
Exeter & Greater Devon	16	4.1	11.9

Appendix 9 Drug-related Deaths by Coroner's District of Jurisdiction. July-December 1999 No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases July-Dec 1999	Semi-annual death rate per 100,000 population	Semi-annual % of inquests held
Torbay & S Devon	2	1.0	3.7
DORSET			
Bournemouth, Poole & E Dorset	8	2.1	9
ESSEX			
Essex & Thurrock (No 1)	18	1.8	7.3
GLOUCESTERSHIRE			
Cheltenham	4	1.7	7
GREATER LONDON			
Eastern London	7	0.8	3.1
Inner North London	38	6.4	15.4
Inner South London	8	1.1	3.2
Inner West London	14	2.1	7
Northern London	20	2.0	8.2
Southern London	1	0.1	0.7
GREATER MANCHESTER			
Central	0	0	0
North	19	4.0	17.4
South	10	1.7	5.5
West	21	3.3	16.2
HAMPSHIRE			
Central Hants	6	2.3	7.9
Portsmouth & S E Hants	14	2.9	15.3
Southampton & New Forest	7	2.3	9
HARTLEPOOL	2	2.8	10.5
HEREFORDSHIRE	3	1.6	8.8

Appendix 9 Drug-related Deaths by Coroner's District of Jurisdiction. July-December 1999
No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases July-Dec 1999	Semi-annual death rate per 100,000 population	Semi-annual % of inquests held
HERTFORDSHIRE			
Hertford	3	1.2	17.6
Hitchin	8	5.3	17.6
West Herts	8	1.9	8.3
ISLE OF WIGHT	3	2.9	8.1
ISLES OF SCILLY	0	0	0
KENT			
Asford & Shepway	8	5.1	26.2
East Kent	1	0.5	1.6
Mid Kent & Medway	11	2.3	12.2
North West Kent	0	0	0
LANCASHIRE			
Blackburn, Hyndburn & Ribble Valley	6	2.9	8.6
Blackpool & the Fylde	11	5.9	16.8
North Lancs	9	4.6	14.2
Preston & S W Lancs	15	4	13.4
LEICESTERSHIRE			
Leicester City & S Leics	11	2.8	5.1
LINCOLNSHIRE			
Boston & Spalding	2	1.9	7.5
Grantham	0	0	0
Lincoln	5	3.9	8.4
Louth	0	0	0
Sleaford	0	0	0
MERSEYSIDE			
Knowsley, St Helens & Sefton	11	2.2	10.9
Liverpool	28	7.6	15.8

Appendix 9 Drug-related Deaths by Coroner's District of Jurisdiction. July-December 1999 No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases July-Dec 1999	Semi-annual death rate per 100,000	Semi-annual % of inquests held
Wirral	11	4.2	17.9
NORFOLK			
Dereham	1	0.6	4.4
Diss	0	0	0
Kings Lynn	1	0.9	3.1
Norwich	6	5.9	7.5
NORTHAMPTONSHIRE	13	2.7	10.1
NORTHHUMBERLAND			
North Northumberland	4	4.6	9
South Northumberland	2	1.2	3.9
NOTTINGHAMSHIRE	6	0.7	2.1
SHROPSHIRE			
Mid & North Shropshire	0	0	0
South Shropshire	0	0	0
Telford & Wrekin	2	1.3	6.7
SOMERSET			
Eastern Somerset	7	3.5	12.3
Western Somerset	6	2.6	14.1
STAFFORDSHIRE			
Stoke on Trent & N Staffs	9	2.4	4.9
SUFFOLK			
Lowestoft	1	0.7	3.2
West Suffolk	11	5.8	15.9
SURREY	14	1.7	8.8
SUSSEX			
Brighton & Hove	26	12.5	37
East Sussex	10	2.5	8.7
West Sussex	19	3.2	12.8
TEESSIDE	2	0.5	1.8

Appendix 9 Drug-related Deaths by Coroner's District of Jurisdiction. July-December 1999 No. of cases, rate per 100,000 population (over 16) and as a percentage of all inquests

Coroner's Jurisdiction and County District	np-SAD cases July-Dec 1999	Semi-annual death rate per 100,000 population	Semi-annual % of inquests held
The Queen's Household	0	0	0
TYNE & WEAR			
Gateshead & South Tyneside	6	2.1	9.4
Newcastle-upon-Tyne	15	6.17	13.8
North Tyneside	0	0	0
Sunderland	5	2.2	6.3
WARWICKSHIRE	1	0.2	1
WEST MIDLANDS			
Birmingham & Solihull	17	1.8	5.5
Dudley	7	2.8	15.7
Wolverhampton	9	4.7	14.2
WILTSHIRE & SWINDON	6	1.3	5.4
WORCESTERSHIRE	9	2.4	9.4
YORKSHIRE			
East Riding & Hull	6	1.3	5.3
North Yorkshire East	5	2.5	8.8
South Yorkshire East	11	2.6	8.1
South Yorkshire West	19	3.2	8.2
West Yorkshire Eastern	38	4.3	11.9
West Yorkshire Western	17	1.9	8
York	5	3.5	14.5
WALES			
Ceredigion	2	3.5	8.7
Pembrokeshire	4	4.4	12.3
Powys	1	1	4.1

Correction: Please note that in the 4th npSAD surveillance report North & West Devon was reported as showing "nil" cases. In fact, North & West Devon merged with Exeter & East Devon on 21.05.99 to form Exeter & Greater Devon. The correct semi-annual death rate for this new jurisdiction would have read 2.54, whilst the semi-annual percent of inquests held would have read 7.5.

Appendix 10 Major Changes in Semi-annual death rate

Coroner's Jurisdiction and county district	Semi-annual death rate per 100,000 population Jan – June 1998	Semi-annual death rate per 100,000 population July – Dec 1998	Semi-annual death rate per 100,000 population Jan – June 1999	Semi-annual death rate per 100,000 population July –Dec 1999
BERKSHIRE				
East Berkshire		1.5	0.5	1.8
Reading	5.3	10.5	1.8	7.9 ^{*a}
CORNWALL				
West Cornwall			5.8	2.1
CUMBRIA				
North Eastern Cumbria	2.4	3.0	1.6	4.9
Western Cumbria	1.5	2.2	0.7	3.0
Furness	3.5	3.5	5.3	8.8
DEVON				
Torbay & S.Devon	2.5	1.0	0.5	1.0
GLOUCESTER-SHIRE				
Cheltenham	0.8	1.2	5.0	1.7 ^{*b}
GREATER LONDON				
Inner North London	10.2	9.2	9.4	6.4
GREATER MANCHESTER				
Manchester Central		5.8	7.3	0
Manchester North	1.5	3.0	4.6	4.0
HARTLEPOOL	1.4	2.8	0	2.8
HEREFORD-SHIRE		1.6	0.5	1.6
HERTFORD-SHIRE				
Hertford	0.4	1.2	0.4	1.2
Hitchin	2.0	4.0	5.3	5.3
KENT				
Mid Kent & Medway			0.8	2.3

Appendix 10 Major Changes in Semi-annual death rate

Coroner's Jurisdiction and county district	Semi-annual death rate per 100,000 population Jan – June 1998	Semi-annual death rate per 100,000 population July – Dec 1998	Semi-annual death rate per 100,000 population Jan – June 1999	Semi-annual death rate per 100,000 population July –Dec 1999
LANCASHIRE				
Preston & S.W.Lancs	4.0	1.7	4.3	4.0
N. Lancs		2.6	5.1	4.6
Blackpool & the Fylde	5.9	9.6	5.3	5.9
LEICESTER-SHIRE				
Leicester City & South Leics.	0.2	2.3	0.2	2.8 ^{*a}
LINCOLNSHIRE				
Lincoln	0.8	11.7	5.5	3.9
MERSEYSIDE				
Liverpool	6.0	2.2	6.5	7.6
Wirral		2.7	0	4.2
NORFOLK				
Kings Lynn	1.2	2.8	0.9	0.9
Norwich		8.8	15.6	5.9 ^{*b}
NOTTINGHAM-SHIRE		1.1	1.7	0.7
SOMERSET				
Eastern Somerset	1.0	3.0	0.5	3.5 ^{*a}
Western Somerset	1.1	2.1	1.1	2.6
SUFFOLK				
West Suffolk	2.1	3.7	1.6	5.8 ^{*a}
TYNE & WEAR				
Gateshead & S. Tyneside	2.1	3.9	0.7	2.1
Newcastle-upon-Tyne	0.9	2.7	4.0	6.2
Sunderland			0	2.2

Appendix 10 Major Changes in Semi-annual death rate

Coroner's Jurisdiction and county district	Semi-annual death rate per 100,000 population Jan – June 1998	Semi-annual death rate per 100,000 population July – Dec 1998	Semi-annual death rate per 100,000 population Jan – June 1999	Semi-annual death rate per 100,000 population July –Dec 1999
WEST MID-LANDS				
Birmingham & Solihull		1.2	0.4	1.8 ^{*a}
YORKSHIRE				
South Yorkshire East	0.7	1.9	1.4	2.6
West Yorkshire East	2.4	4.5	4.3	4.3
WALES				
Ceredigion	0	3.5	0	3.5
Pembrokeshire		6.7	0	4.5

Notes:

*a indicates significant ($p < 0.05$) increase in semi-annual death rate between the two reporting periods Jan-June 1999 and July-Dec 1999.

*b indicates significant ($p < 0.05$) decrease in semi-annual death rate between the two reporting periods Jan-June 1999 and July-Dec 1999.

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Location of Death

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Substances Implicated in Death

Prescribed Psychoactive Medication

Associated Risks

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